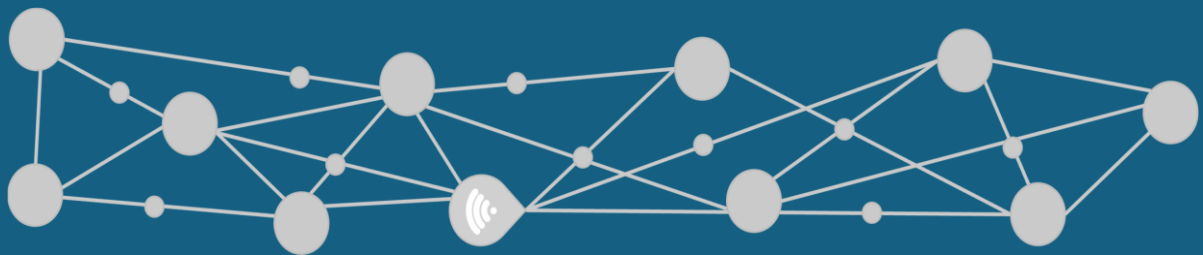


4th Digital Geographies Conference

Artificial geographies: opening the black box for a new wave of critical thinking

November 3-4 2025 | IGOT – University of Lisbon, Portugal

Book of Abstracts



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OVERVIEW PROGRAMME

Sunday, November 2, 2025 – Field Trip

3pm Meeting Point: Martim Moniz Square https://forms.gle/g1LrjCWNXTM2iMWu9	Field Trip: Digital Economy and City Centre Transformation Daniel Paiva and Pedro Guimarães University of Lisbon
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Monday, November 3, 2025

8:30am	Registration
9am	Opening Session Mário Vale President of IGOT and Organising team Daniela Ferreira Organising team Pedro Guimarães Coordinator of Research Group ZOE
9:15am	Keynote Lecture 1 Agnieszka Leszczynski University of Western Ontario Chair: Mário Vale (University of Lisbon)
10:30am	<i>Coffee Break</i>
11am	Parallel Paper Sessions (SS2a; SS5a; SS7; SS14; RS1)
1pm	<i>Lunch Break (cost-free)</i>
2pm	Parallel Paper Sessions (SS2b; SS5b; SS6; RS2; RS3)
4pm	<i>Coffee Break</i>

5pm	Workshop: Rethinking Statuary in Digital Geographies: A Speculative Design Workshop Tiago Mindrico and Ana Lúcia LARSyS, Interactive Technologies Institute (ITI) & Faculty of Fine Arts of the University of Lisbon)
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Tuesday, November 4, 2025

9am	Parallel Paper Sessions (SS2c; SS3a; SS8; SS13; RS4)
11am	<i>Coffee Break</i>
11:30am	Keynote Lecture 2 Paul Langley Durham University Chair: Daniela Ferreira (University of Lisbon)
12:45pm	<i>Lunch Break (cost-free)</i>
1:45pm	Parallel Paper Sessions (SS3b; SS4a; SS10; RS5; RS6)
3:45pm	<i>Coffee Break</i>
4:15pm	Parallel Paper Sessions (SS3c; SS4b; SS12; RS7; RS8)
6pm	Closing Conference Mário Vale President of IGOT and Organising team Daniela Ferreira Organising team José Luís Zêzere Centre of Geographical Studies

PAPER PRESENTATION SESSIONS

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PAPER PRESENTATION SESSIONS

Monday (November 3)

9am – Opening Session and Keynote Lecture 1

10:30pm – Coffee Break

11am – Parallel Paper Sessions

(SS2a) Special Session 2a– Algorithmic governance, digital sovereignty, and public-private data regimes – Embedding Digital Infrastructure

Chair | Yuko Aoyama (Clark University), Ricardo Barbosa (Clark University), and Matthew Zook (University of Kentucky)

Time slot | 11am (Monday – November 3)

Room:

Gender-based algorithmic exclusion from a South African social assistance transfer

Kelle Howson (Institute for Economic Justice, South Africa)

Abstract. Governments are increasingly using algorithms to exclude persons deemed less deserving from social security benefits. In a variety of contexts including the Netherlands, Serbia, Australia, Jordan and India, the use of automated systems to determine who can access entitlements has been shown to have had discriminatory and unfair outcomes. South Africa is increasingly moving towards the use of algorithms to determine eligibility for social security and to profile beneficiaries for “fraud risk”, based on data held both by government agencies and “industry partners” (namely major banks). This paper draws on survey data from 900 individuals who had experienced digital and algorithmic exclusion from a South African social security transfer aimed at low income adults, to investigate the extent to which exclusion was discriminatory, with a particular focus on gender. We find that caregivers (predominantly women) are more likely to apply for the transfer, but are also at greater risk of being algorithmically excluded. We place this in the context of South Africa’s pre-existing gender inequality which has unique historical-spatial underpinnings. Women in South Africa are much more likely to receive domestic remittances on behalf of children in their care, as well as intra-household transfers intended for household use, for instance to buy groceries. These inflows disproportionately appear in women’s bank accounts and are misattributed to personal income through an automated eligibility verification system which continuously surveils the bank accounts of applicants. Our qualitative data shows exclusion results in severe food-insecurity, a risk which is amplified for women with caregiving responsibilities, also disadvantaging those in their care.

Keywords: Digital social security, algorithmic exclusion, gender bias, caregiving, South Africa

Digital industrial platforms and AI-enabled reconfiguration of lithium-ion battery production networks: Evidence from China's Greater Bay Area

Chun Yang (Hong Kong Baptist University, China)

Abstract. Since the early 2000s, manufacturing industry has undergone dramatic restructuring driven by digital platforms and disruptive technologies such as AI. Existing literature is dominated by consumer and distribution platforms, while little research has examined how proprietary AI-powered digital industrial platforms (DIPs) have brought about organizational and spatial reconfiguration of production networks in strategic industries, such as lithium-ion battery (LiB) production in the techno-geopolitical dynamics. This paper develops a multi-scalar analytical framework to explore the spatial reconfiguration of regional LiB production networks in interplay with the global, national, city and firm levels of geopolitical technological dynamics. Drawing upon the in-depth interviews with entrepreneurs and platform governance actors in China's Guangdong-Hong Kong-Macao Greater Bay Area (GBA) which has undergone digital transformation of the established LiB manufacturing since the mid-2010s, the study elucidates the coordinated regional production networks characterized salient spatial division of labor and flow of digital manufacturing data among major cities in the GBA, such as Shenzhen, Dongguan and Hong Kong, specializing in cathode materials, anode materials, cell assembly, and battery recycling and technological research respectively. The findings of this study enrich the literature by shedding light on the role of Chinese AI-enabled digital industrial platform-led reconfiguration of regional LiB production network in the heightened geopolitical and technological competition in strategic industries.

Keywords: Digital industrial platforms, AI-powered industrial restructuring, lithium-ion battery industry, regional production networks, Greater Bay Area, China

From Desktop to Cloud: Tracing the Embeddedness of Digital Infrastructures

Brad Weed (Independent researcher)

Abstract. This paper examines how digital infrastructures transform their modes of embeddedness over time, reshaping labor, geography, and governance. It traces a historical arc from early productivity software, such as Microsoft Office and Windows, which localized information work on individual desktops, to the rise of local area networks and the commercial Internet, where infrastructures became increasingly networked and mobile. This shift laid the foundations for contemporary platform economies, capable of selectively embedding within urban systems while evading traditional forms of regulation and civic accountability. Today, the proliferation of cloud services and the Internet of Things further extends these transformations, embedding computational governance into vehicles, supply chains, and everyday urban environments—including incorporating forms of surveillance into our homes, leisure choices, and body processes. Through a critical-conceptual inquiry drawing on the history of concepts, socio-technical design critique, and critical spatial theory, the paper interrogates how digital infrastructures naturalize themselves across scales—from fixed-location devices to mobile platforms and planetary infrastructures. Rather than presenting a singular empirical case, the paper historicizes platform urbanism as an evolving form of infrastructural embeddedness, linking shifts in technological architectures to broader political-economic and spatial transformations. By reframing embeddedness as a dynamic and contested process, the paper contributes to current debates in digital geography, platform studies, and infrastructure theory. It offers a conceptual lens to understand how digital systems reposition themselves—from desktop productivity tools to urban-

scale technologies of governance—reshaping the socio-spatial conditions through which digital capitalism operates.

Keywords: Digital infrastructures, Embeddedness, Platform urbanism, Socio-technical systems, Historiography of technology

Animal tracking in extensive production systems: the politics of digital traceability in Brazil's cattle and tuna sectors

Ricardo Barbosa (Clark University, USA)

Abstract. Digital traceability technologies promise to enhance environmental governance and market transparency in agri-food supply chains. However, efforts to track animals raised in extensive production systems – such as cattle in the Amazon and tuna off Brazil's northeastern coast – expose tensions around data governance, platform control, and the spatial complexities of monitoring mobile, sentient animals. This paper examines two state-led traceability initiatives: Pará's mandatory cattle tracking program and Ceará's RASTUM tuna tracking project. Both aim to meet sustainability certification and export regulations by transforming historically proprietary agricultural data into publicly accessible, blockchain-based ledgers. These cases highlight the friction between public goals for transparency and agribusiness efforts to maintain proprietary control over data infrastructures. In Pará, traceability is leveraged alongside Brazil's Rural Environmental Registry (CAR) to ensure cattle grazing occurs only in deforestation-free areas. In Ceará, the RASTUM initiative leverages AI and geolocated, fisher-reported data to build a digital infrastructure via the Brazilian Agro-Traceability System (Sibraar). Despite their ambitions, both programs face technical, spatial, and labor-related challenges in tracking animals across vast and fluid geographies – unlike confined livestock sectors such as dairy, swine, and poultry where standardized monitoring is more feasible. Drawing on critical agrarian and data studies, the paper argues that traceability is not simply a technofix, but a contested site of governance where sustainability goals collide with uneven burdens of data production across public-private regimes. As agricultural data becomes a commodity, new inequalities emerge around platform power, labor demands, and uneven participation in data economies. Through comparative analysis, the paper highlights how digital infrastructures mediate relations between the state, agribusiness, and producers, revealing the spatial and political specificities of traceability in extensive animal production systems.

Keywords: Digital traceability, data governance, blockchain, cattle ranching, tuna fisheries, Brazil

Governing Data in Digital Agriculture: A Comparative Study of Governance Models and Their Trade-offs

Monja Sauvagerd (University of Bonn, Germany) and Anne Visser (University of California, USA)

Abstract. Data governance lies at the heart of digital transformation, shaping who controls and accesses data – and who ultimately benefits from data-driven innovation. In digital agriculture, these tensions are especially pronounced, as platformization, oligopolistic market structures, and fragmented data systems make it difficult to balance openness with proprietary control. While digital tools promise efficiency and sustainability, the absence of strong governance frameworks has contributed to interoperability challenges, power asymmetries, and raised concerns about competition and equity – issues now increasingly recognized by policymakers and stakeholders. Building on theories of data governance and platform regulation, this study examines how different governance approaches structure data access, competition, and innovation in digital agriculture. It develops a typology distinguishing between regulatory frameworks, government-run platforms,

voluntary industry initiatives, business-driven models, cooperative farmer-led efforts, and open-source or public initiatives. Through comparative case studies and expert interviews with policymakers, agribusinesses, and cooperatives, the study explores how these models navigate trade-offs between market efficiency, innovation, and public interest goals. By analyzing both intended objectives and practical outcomes, the research identifies opportunities and limitations in current governance approaches. This study contributes to ongoing debates about platform governance and the future of digital agriculture, offering practical insights for policymakers and stakeholders striving to design data governance frameworks that promote innovation and competition while ensuring equity and inclusive access.

Keywords: Digital agriculture, Data governance, Platform regulation, Interoperability, Competition and Innovation

(SS5a) Special Session 5a – Putting Information into Spatial Structures: Approaches in Localising Information and Knowledge

Chair | Balázs Cserpes, Katharina Borgmann, Benjamin Dally (HafenCity University Hamburg)

Time slot | 11am (Monday – November 3)

Room:

A City of A Thousand Reports: Mapping Digital Participation in Jakarta, Indonesia

Dhimas Bayu Anindito (University College London, UK)

Abstract. Citizen reporting systems are emerging means of digital public participation but receive fewer spotlights in digital geography compared to private platforms such as Facebook, Twitter, and Foursquare or open-source applications like Wikipedia and OpenStreetMap. While citizen reporting systems are rife with potential for meaningful participation in the policymaking process, the municipal government also does not necessarily extract important information from such platforms to understand how their citizens behave and interact in the digital sphere—particularly to improve the service of citizen reporting systems themselves. This study analyses the sociolinguistic factors inherent in a citizen reporting system called Qlue in Jakarta to understand how users utilise the platform. This study highlights several preliminary findings through probabilistic topic modelling and spatial analysis towards textual information, spatiotemporal attributes of crowdsourced data, and administrative boundaries' socioeconomic variables. First, the textual information provided by the users is insightful in understanding the 'citizen language' exercised daily, in contrast to the 'bureaucratic language' that manifests as the report topics that users should choose during data production. Secondly, probabilistic topic modelling remains efficient in reducing the report topics by 74.28%. Thirdly, there is a distance decay effect, which suggests the motivation of report contribution is spatially bounded, as most contributions are reported around 500 metres from users' indicative address. Lastly, higher report contributions might also correlate with more affluent areas, suggesting 'digital deserts' further influencing biases in urban policymaking.

Keywords: Crowdsourcing, digital participation, platform urbanism, public participation, urban analytics

The Development of a Dataset for Machine Learning (ML) based Traffic Demand Simulation

Stefan Bindreiter and Julia Forster (TU Wien, Austria)

Abstract. This paper concerns the enhancement of national traffic survey data with high-resolution traffic demand simulation data, thus establishing a foundation for ML-based prediction models. The development of simulation datasets facilitates the emulation of scenarios and variants. The findings provide a robust basis for strategic planning decisions. The resulting simulation data is typically associated with specific (spatial) objects within a digital twin and represents a purely quantitative assessment/evaluation basis for this specific situation. It is not possible to extrapolate or transfer the phenomenon to other spatial situations. However, for the utilisation of machine learning (ML) methodologies, it would be advantageous to possess data sets for abstracted spatial scenarios, with which elementary predictions and approximate preliminary estimates can be conducted using ML prediction. In addition to quantitative aspects (deriving from the results of concrete simulations), it is also necessary to record the qualitative correlations (of the respective specific spatial situation) in order to create a link between simulation results and spatial types. The present paper addresses this challenge by combining high-resolution mobility demand simulation data from a previous project with Austria-wide survey data ('Österreich unterwegs') based on different spatial types. Amongst others, proven techniques from previous projects for enriching building data and describing urban spaces/profiles are utilised. In this way, suitable data sets are created that can be used to apply prediction models for mobility demand and behaviour in different spatial types in Austria.

Keywords: Traffic survey data, mobility demand simulation, Machine Learning

Twitter anticipates adoption and change in pro-environmental behavior

Edoardo Maggioni, Luca Maria Aiello, Diego Garlaschelli, and Rossana Mastrandrea (University of Pisa, Italy)

Abstract. Fostering coordinated pro-environmental actions is critical for effective climate action. Individual behaviors, when effectively communicated, can stimulate collective actions driving systemic change. Online social networks offer valuable tools for monitoring and promoting pro-environmental behaviors, aiding data-driven climate strategies. However, the relationship between online behaviors and tangible actions remains underexplored. This project investigates correlations between climate-change-related Twitter discourse and pro-environmental actions across European regions. We use ""The Climate Change Twitter Dataset"" to count the number of geolocalized tweets expressing belief in climate change in each region. To measure offline behaviors we used two editions of the Special Eurobarometer survey about citizens attitudes towards the environment, a series of surveys conducted by the European Commission. We found significant positive correlations between (i) the number of believer tweets and the average number of pro-environmental actions per participant in 2019; and (ii) the two-year variations (2017-2019), describing a behavioral change. Robustness was verified across three territorial aggregation levels, distinguishing between extensive (participants reporting actions) and intensive (average actions among active participants) contributions. Controlling for purchasing power and education, multi-dimensional regressions confirmed Twitter measures had larger coefficients. Preliminary results suggest correlations strengthen when filtering tweets by social intent, sentiment, and detailed topics. Future analysis will incorporate additional social networks and surveys. These promising signals highlight the potential of online social networks as a valuable tool, not only for monitoring behaviors across different platforms but also for designing targeted interventions aimed at translating online engagement into offline pro-environmental actions.

Keywords: Pro-environmental behaviors, Climate change, Social networks, Machine learning, Geo-spatial analysis

Towards a Domain specific LLM for Sustainable Urban Development: Extracting Research trends and topics from Text Data

Husain Vaghjipurwala, Chandrakant Bothe, Johannes Twiefel, Katharina Borgmann, Maryam Hosseinzadeh, Agota Barabas, Jörg Noennig, (HafenCity University Hamburg, Germany)(HafenCity University Hamburg, Germany)

Abstract. The German Federal Ministry for Education and Research (BMBF) funding priority Sustainable Development of Urban Regions, (SURE) is an application-oriented research that supports ten collaborative research projects focused on urban sustainability. The ten collaborative projects aim to develop practical solutions for more sustainable and resilient cities and regions in Southeast Asia and China. The SURE Facilitation and Synthesis Project has one of the main aims to research and employ state-of-the-art technologies and develop digital tools that help to uncover dormant knowledge, identify open questions and problems, and outline solutions and trends for future research on sustainable urban development. This research is a part of a series of experiments aimed at creating a benchmark methodology for identifying Topic clusters and monitoring Research trends in the rapidly growing corpus of texts under the SURE funding initiative. Topic modeling and extraction is not a new field in synthesis-research, but with the current advancements in LLMs, such processes can as well be advanced with better accuracy and efficiency. Machine based topic/trend extraction has traditionally focused on variations of LSI (Latent Sematic Indexing), LDA (Latent Dirichlet Allocation) (Churchill and Singh 2022) or a simpler keyword evaluation of research papers (Nguyen et al. 2022). During the past decade, however, with the emergence of the word embeddings-based methods, the field of LLMs (Large Language Models) has taken a center stage, and the continuous improvements in these models make them ever more accurate for analysis of texts. In this paper, we explore the application of an LLM based methodology, firstly to validate the domain experts based manual identification of topics and secondly, to create a benchmark method for machine-based extraction of Topics related to sustainable urban development, based on our case studies. The research uses a corpus of documents, including field reports and grant application documents, from the ten SURE-projects, and hence it provides a window into the often-ignored part of applied research like activity reports and other forms of knowledge transfers. The process builds upon established methodology by (Thompson and Mimno 2020) whereby the tokenized text is used to create embeddings with BERT (Bidirectional Encoder Representations from Transformers) (Devlin et al. 2018) to create a vector space. The embeddings are then clustered and labeled according to their semantic similarity (cosine) with domain expert input, which allows a comprehensive view of themes/topics and sub-topics. The results of the approach aim to take a step towards building a domain specific Language Model to synthesize Sustainable Urban Development practices and approaches which can further support decision making and knowledge transfer in applied research projects.

Keywords: Sustainable Urban Development; Topic Modeling; Large Language Models; Semantic Clustering

(SS7) Special Session 7 – Digital territoriality across scale

Chair | Dylan Brady (National University of Singapore)

Time slot | 11am (Monday – November 3)

Room:

Singapore's digital payment landscape: balancing autonomy and access within and across territory

Dylan Brady (National University of Singapore)

Abstract. Digital payments are fast reworking territory. Singapore has long been an outlier in cash-centric Southeast Asia for its relatively high degree of integration with US-based payment card networks. In the past decade, a Chinese model of digital payments—built around smartphone apps, mediated via QR-code interfaces—has proliferated in East and Southeast Asia. To keep from being leapfrogged, Singapore has developed its own national digital payment platforms and infrastructures, integrated into a Singaporean stack. The SGQR interface and its underlying infrastructures embed digital payments within a Singaporean frame: integrating with, rather than displacing, regional and global payment platforms. This paper employs the walkthrough method to examine how digital payments are practiced in Singapore and contextualizes these everyday interfaces in the historical and geographical development of Singapore's national stack. Domestic infrastructures and platforms like NETS, SGQR, PayNow and PayLah! collectively enable card-based networks dominant in the US and Europe and QR-based platforms in China and Southeast Asia to connect, without sacrificing autonomy. They realize Singaporean space not by enforcing a crude territorialism, but by integrating cross-border connections within a national infrastructure. The resulting three-pillar payments landscape gives Singapore access to an incredible range of payment platforms across the growing Sino-American technological divide. However, the underlying complexity of the multiple contending platforms can make the seemingly homogenized payments landscape unexpectedly uneven, for visiting and citizen-users alike. This paper shows how digital payments infrastructure is developing within the context of but not necessarily constrained by the US-China rivalry. At the level of the interface, it shows how greater connections and centralization can nonetheless create greater heterogeneity in everyday practices of digital payment.

Keywords: Payments, territory, infrastructure, state, interface

The depoliticization of institutional entrepreneurship: influencing local regulations at scale

Jelke Bosma (University of Amsterdam, Netherlands)

Abstract. While scaling for Airbnb primarily involves processing growing transaction volumes, the platform also functions as an institutional entrepreneur actively shaping short-term rental regulations to benefit its business model. Current literature mostly documents isolated examples of Airbnb's influence on local policies, but in this paper I argue that such interventions should be analyzed as components of a global political strategy rather than discrete local cases. As the short-term rental market matures and regulation becomes inevitable, we must understand how platforms attempt to scale their institutional influence across jurisdictions. This research examines Airbnb's evolving regulatory approaches in Amsterdam and Berlin since 2015 as case studies in scalable institutional entrepreneurship. Drawing on empirical data, I demonstrate how Airbnb treats each regulatory engagement—whether developing new policy models, disseminating strategic narratives, or implementing regulatory tools—as an experiment yielding lessons for similar challenges elsewhere. Tracking these experiments over time reveals Airbnb's ultimate strategy: to secure future

economic expansion by depoliticizing its business operations. The findings contribute to our understanding of platform capitalism by highlighting how digital platforms seek to balance adapting to regulatory environments with attempts to transform them across multiple scales and locations. This scaled approach to institutional entrepreneurship represents a distinct form of political agency that deserves greater scholarly attention, particularly as platform companies increasingly shape not just markets but the very regulatory frameworks designed to govern them.

Keywords: Platform urbanism, short-term rentals, digital geographies, institutional entrepreneurship

Digital Platforms and Transnational Social Protections: Uneven Territorialization in the Digital Economy

María Cervantes-Macias (University of British Columbia, Canada)

Abstract. This paper examines how digital platforms function as interfaces, reconfiguring economic geographies and territorializing social protections at multiple scales. Through two case studies—highly skilled Mexican migrants engaged in remote work, and immigrant platform workers in Canada—it explores how platform economies both enable and constrain transnational mobility, deepening global inequalities through the uneven impact of flexible labor mediated by digital infrastructures. The first case study focuses on 30 skilled Mexican migrants in Canada and the United States who leveraged remote work during COVID-19 to relocate temporarily to Mexico while maintaining employment abroad. This shift, facilitated by digital platforms, cultivated transnational social protections (Levitt, Mueller, & Lloyd, 2017), allowing workers to navigate national labor regimes while engaging in cross-border economic activities. However, this form of digital territoriality remains unequally accessible, reinforcing classed and credentialized disparities in mobility. The second case study draws on 30 interviews with immigrant gig workers in Canada, for whom platform economies offer alternative labor market entry points amid systemic barriers, such as credential recognition and local work experience requirements. While platforms provide income opportunities, they also expose workers to algorithmic control, precarity, and the erosion of state-backed social protections. As digital infrastructures mediate access to labor and welfare, gig workers experience a diminished value of citizenship. By situating digital platforms as contested interfaces of economic governance, this paper contributes to discussions on how digital infrastructures reshape territoriality, labor markets, and social protections across transnational scales. It highlights how platforms function as both tools of economic integration and sites of struggle, where the interplay between states, markets, and workers generates new territorial configurations and exclusions in the digital economy.

Keywords: Platform economy, digital labor, immigrant labor, gig workers, skilled workers

Blockchain Borders and Distributed Governance: The Known Traveller Digital Identity

Emily Gilbert (University of Toronto, Canada)

Abstract. Canada and the Netherlands are piloting the Known Traveller Digital Identity (KTDI), a blockchain-powered digital identity for travelers that will incorporate advanced biometrics, distributed ledger technology, and cryptography. Travellers will build ‘trust’ in their digital identity by adding levels of attestations to a phone app: these could be official documents, like proof of citizenship, or other information, like bank details, educational achievement, and health data (e.g. vaccinations). Each interaction along a journey—such as hotel stays with uploaded receipts—will help build trust in the individual as identity data-points are verified. The KTDI portends to reshape scale and territoriality in three ways. First, through the blockchain, governance is redistributed, both domestically and internationally, as it is enacted through networks that eschew central government

authority in favour of decentralized, transactional authentication beyond the scale of the nation-states. Second, the appeal to individual ‘self-sovereign’ identities generates new ways of thinking about the embodied and responsabilized self who must manage and maintain their mobile identities vis-à-vis the state and the private sector. Third, while new forms of border digitalization such as KTDI are stretching the border even further away from the border itself, they also work alongside and even support the increasing hardening of border security (eg walls, drones, surveillance towers, etc). As I will discuss, KTDI portends a new era of geopolitics with implications for mobility, territoriality, sovereignty and jurisdiction.

Keywords: Borders, governance, territoriality, sovereignty, jurisdiction

Spatial Arrangements of, by, and through AI. From Code/Space to Spacecodes

Ludovico Rella (Durham University, UK)

Abstract. Louise Amoore has recently argued that AI algorithms must be understood beyond an if-then-else list of steps, and more as a generative spatial arrangement of propositions that allows to engage with the world experimentally. This paper takes that spatial imaginary forward and explores three different ways in which Artificial Intelligence can be apprehended spatially. First, as computational workload is increasingly frequently displaced from the datacentre and performed instead at the Edge, one must be attentive to the spatialities of AI in terms of where training and inference happen, the materialities that computation is performed on, and how this different spatial configuration produces novel algorithmic architectures. Second, space is generated by Artificial Intelligence as virtual spaces, for example, when generating an environment that then Reinforcement Learning agents navigate, or when generative AI produces ex novo spatial arrangements such as pictures, sentences, videos and audios. Third, the spatialities of and by AI influence and are influenced by novel apprehensions of space through AI: as Amoore has argued, in AI all space is feature space because AI is geared towards apprehending the world as a spatially oriented collection of features assembled in feature matrices. Recent debates in Machine Learning have even argued that space is apprehended through AI at a higher degree of features than those that we as human can perceive: reality is a topological manifold that ML algorithms can unfold in ways unavailable to humans.

Keywords: AI, Space, Edge, Cloud

Managing Locality: Digital Infrastructures and the Reconfiguration of (Urban) Space

Oksana Zaporozhets and Liubov Chernysheva (Bauhaus University Weimar (Germany))

Abstract. The significance of locality across fields such as urban and digital studies remains a subject of ongoing debate. This debate is shaped by two dominant perspectives: one valorizes locality as a mechanism for resisting broader processes such as global economic flows or sovereign digital infrastructures (Parks 2007; Lokot 2019; Möller 2021); the other diminishes its importance by framing it as a component of extensive relational networks (Barns 2017). In both, locality is often objectified and treated as spatially and materially bounded, or used synonymously with “a specific” opposed to “a universal” in conceptualising urban phenomena (McFarlane 2024). This presentation argues that digital infrastructures play a crucial role in shaping the concept of locality and enacting it by enabling diverse urban groups to engage in discussions and participate in decision-making processes. While early digital scholarship often viewed locality as a passive backdrop for large-scale political movements (e.g., Occupy, Indignados) (McGillivray et al., 2020), recent research indicates that it can influence broader agendas and be strategically mobilized (Vicari, 2014). Focusing on citizen-led digital initiatives in authoritarian cities, this presentation introduces the concept of managed locality — the strategic production of boundaries that define and structure locality. These

may be semantic, fostering belonging and framing issues as local, or technological, regulating access and participation in decision-making processes. In assembling localities, digital activists act as practitioners who construct and manage spatial imaginaries diverging from official territorial divisions. Examining these dynamics, the presentation shows how locality operates as a tool for (de)politicizing urban issues.

Keywords: Scale, locality, citizen-led digital infrastructures

(SS14) Special Session 14 – Consumption, the city and the digital

Chair | Daniel Paiva and Pedro Guimarães (University of Lisbon)

Time slot | 11am (Monday – November 3)

Room:

Introduction to Special Session 14: Consumption, the city and the digital

Daniel Paiva and Pedro Guimarães (University of Lisbon, Portugal)

Abstract. For the last decades, it has become commonplace that frame digitalization as a challenge or a threat to urban retail and services. Since the turn of the century, the emergence and increasing market share of digital retailers has been perceived as a threat that could lead to the decline of urban shopping districts, as consumers have more and more options to acquire products and services online without having to visit a physical store. However, notwithstanding the deep transformations that occurred in urban retail and services in the last three decades, many of which indeed fueled by the impact of digital tools, it must be underlined that urban retail and services remain a crucial element of the urban fabric, even after more than thirty years after the birth of the world wide web. Nevertheless, the digital economy is profoundly reshaping the connection between city dwellers and urban space, impacting not only economic vitality but also social cohesion and inclusion. Retail digitalization is creating divides among urban entrepreneurs and between consumption spaces in the city, as some actors and spaces engage more deeply with digital tools while others remain mostly analogic. Therefore, it is crucial to examine how digital tools are transforming the city by shaping consumption activities.

Keywords: Consumption; Digitalization; Urban Geography; Urban Retail; Digital Divide

Rethinking Smart Tourism: Digital Change and Everyday Experience in Edinburgh

Ozge Yalinay (Heriot-Watt University, UK)

Abstract. This research examines how smart tourism is developing in Edinburgh, a city known for its cultural heritage and established visitor economy. Although digital technologies are increasingly promoted within tourism policy and strategy, much of the discussion around “smart” remains vague and disconnected from practice. This is particularly evident in destinations where digital strategies are still developing. Hence, the current research explores how digital technologies are adopted and experienced by both visitors and tourism providers, and how these practices contribute to or challenge value creation in the local context. This research adopts a mixed methods design, combining a visitor survey with qualitative interviews involving tourism providers and practitioners in Edinburgh. Drawing on value creation theory and literature in marketing and tourism studies, the research examines how value is produced through digital interactions and how tourism experiences are shaped by mobile technologies, online platforms, and digital services. Rather than evaluating the success of smart tourism initiatives, it focuses on how digital tools are used in practice and how

they relate to broader goals of enhancing visitor experience and supporting local providers. By focusing on a city where digital development in tourism is still in progress, this research aims to contribute to academic debates on the application of smart tourism in urban heritage settings. It also seeks to offer practical insights that may support local tourism providers in developing digital strategies to enhance the overall visitor experience.

Keywords: Smart tourism, Value creation, Urban heritage, Mixed methods

Do online on-demand food delivery platforms weaken or enhance community cohesion? An analysis through the lens of social infrastructure theory

Shuwen Zhou (University of Oxford, UK), Kaizhong Cao, Yiyang Zhang, Yufei Zheng, Yige Jiang, Ying Zhang, Hang Su, Yiyan Jiang, Siyuan Guo (University of British Columbia, Canada)

Abstract. During the COVID-19 lockdowns in China, civic groups and volunteers played a prominent role in coordinating resources and delivering essential supplies to communities. The significance of group administrators in community-based grocery group buying (CGB) emerged during this period. CGB is a form of online shopping facilitated by on-demand food delivery platforms (OFDP). OFDPs, as a manifestation of digital platform urbanism transforming urban life, have garnered increasing attention from researchers in recent years, enriching the literature on urban geography and digital urbanism. Popular themes include platform capitalism, labour conditions, and consumption behaviour. CGB platforms, a subset of OFDPs, are distinguished by their deep engagement with owners of community-based grocery shops, setting them apart from platforms such as Deliveroo or Uber Eats. The expansion of CGB platforms underscored the indispensable role of administrators during the COVID-19 pandemic, highlighting an underexplored question: How do the CGB platforms engage with local communities and influence community connections? To address this question, this paper adopts a social infrastructure perspective, proposing a framework based on publicness, sociality, and encounter. It aims to contribute to critical debates on platform urbanism and community development.³

Keywords: Digital platform, food delivery, social infrastructure

Kosher Cyberspace: Haredi Jewish Consumption in the Age of the Internet

Martin Saps (King's College, UK)

Abstract. The rise of online commerce has often been framed as both a threat to traditional retail and a force reshaping urban spaces. This paper examines the case of Hasidic Jewish communities, whose spatial and consumption patterns are shaped by religious laws and the spatial dynamics of observant life. Despite the rapid expansion of e-commerce, Hasidic engagement with digital retail remained limited until the late 2010s, with internet access often restricted for many community members. However, the emergence of a "kosher internet" has facilitated new digital enclaves, forming transnational e-commerce networks that connect businesses and consumers across New York, London, and Jerusalem. These digital spatialities are redefining urban consumption practices, allowing Hasidic commerce to exist within a controlled online ecosystem while still engaging with broader retail trends. Through an analysis of online "kosher" media, advertisements, and digital marketplaces, this paper explores how religious constraints shape participation in platform urbanism, illustrating the evolving relationship between digital and physical consumption in contemporary cities.

Keywords: Digital Enclaves, Transnational Digital Networks, Platform Urbanism, Religious Consumption

(RS1) Regular Session 1 – Digital geographies of care

Chair | Helena Esteves (University of Lisbon)

Time slot | 11am (Monday – November 3)

Room:

(En) coding care into digital urbanism: Vignettes of collective practices

Niloufar Vadiati (Leuphana University Lüneburg, Germany)

Abstract. The tech-entrepreneurial model behind the computation of urban processes is (re) producing what has already been identified as a technocratic, solutionist, and commodifying model of urban planning. Within this model, not only is care no longer a prerequisite for urban production, but decades of smartification and platformization have been diminishing the spaces, infrastructures, and socio-economic relations that were co-produced to enable care. Through the lens of feminist geography, care is examined as a multidimensional concept encompassing socio-spatial dynamics, power relations, and ethical urban practices. Using empirical data from three research projects, the study showcases alternative digital urbanism practices, categorized into three vignettes: refusal, commoning, and reappropriation. These categories are illustrated with cases such as grassroots food cooperatives, feminist hack-spaces, digital sovereignty initiatives, platform-based welfare experiments and civil society initiatives such as Code for Germany. By situating care within the spatial and social fabric of urban life, the paper argues for its potential as a politic, practice, and epistemology that challenges the exploitative logic of contemporary digital infrastructures. The findings reveal the embeddedness of care practices within local contexts, highlighting the dual need for trans-local networks and territorial embeddedness. This study contributes to the discourse on caring digital urbanism, advancing a feminist theorisation of everyday digital urbanism.

Keywords: Digital Urbanism, Care, Refusal, Commoning, Reappropriation

Digital geographies of menopause

Aija Lulle (University of Eastern Finland, Finland)

Abstract. The menopause ‘revolution’ is on the rise. In the UK, people are signing petitions and protesting in front of Parliament to raise awareness about menopause issues. The new Labour government’s Employment Rights Bill mandates that employers transform workplaces to better support menopausal staff. In Ireland and Canada, governments are providing free menopause hormone therapy. The US has recently allocated billions of dollars to midlife health research, with a significant portion dedicated to menopause research, investing in technology companies. App and tech companies are capitalising on this trend, offering instant tests for perimenopause and analysing perimenopause testing kits. Online communities focused on menopause are also growing, breaking down long-standing Western stigmas. The guiding research question in my presentation is: How do online communities challenge menopause praxis, where and for whom? The overarching aim of my work is to advance understanding of key spatial and scalar dimensions of menopause as a social process to contribute to empowerment of menopausal people and society at large. To do so, I introduce an innovative methodology of critical data design to study online communities, triangulated with text mining and off-line interview methods.

Keywords: Mapping power; gender; social networks; text-mining; menopause activism

Between Care and Connectivity: The Digital Divide among Older Adults in Digital Health Platforms

Cláudio Luís (University of Lisbon, Portugal)

Abstract. Technological developments in the field of healthcare have raised growing concerns about equity in access to and use of such technologies, particularly among older adults. The concept of the digital divide, understood in three levels (access, usage, and outcomes), provides a relevant theoretical framework for analysing these inequalities. However, its application to the specific domain of digital healthcare platforms raises critical questions: how do these three levels operate in ageing contexts? Is this model adequately equipped to capture the territorial specificities and the differentiated capacities of older users? This paper proposes a theoretical reflection on these questions, grounded in a critical review of the existing literature on ageing, digital healthcare platforms, and the digital divide. The aim is to discuss to what extent the three-level approach to the digital divide helps to understand (or potentially obscures) the social and spatial dynamics associated with the use of these platforms by the elderly population.

Keywords: Digital geographies, Digital health platforms, Digital divide, Older adults

Digital Geographies of Surveillance: Enforcement Practices and Segregation in African Wildlife Conservation

Bilal Butt (University of Michigan, USA)

Abstract. The rapid rise of surveillance technologies to enhance capitalism and create racially segregated spaces is now reaching new spheres. In this paper, we present theories, perspectives, and empirical evidence on the use of surveillance technologies in East African protected areas. Surveillance technologies are often presented as a necessary solution to combat wildlife poaching and species protection for rare and endangered species such as rhinos and elephants. Today, surveillance technologies such as movement tracking, imagery, remote cameras, and mobile monitoring are being widely implemented across both state and non-state protected areas. We examine the history, use, spatiality, and political-economic dimensions of different technologies used in conservation surveillance. Using cases from Kenya, we focus on the intersections between the species ecology of the wild animals and the design, implementation, and analysis of the various surveillance technologies used to monitor these species. Using interviews and empirical observations from several conservation spaces in Kenya, we find that there is a range of technologies used, both hardware and software, that are deployed and managed by conservation elites. These actors enforce racial hierarchies of capital accumulation through exclusive wildlife viewing safaris, wildlife veterinary care, and environmental monitoring. We demonstrate how raciality enforces spatial segregation as conservation managers exercise control and authority over indigenous lives and spaces. Additionally, surveillance technologies serve to codify indigenous land management practices and movements as legal or illegal.

Keywords: Wildlife, safari, political ecology, STS, racism, protected areas, surveillance, capitalism

1pm – Lunch Break (cost-free)

2pm – Parallel Paper Sessions

(SS2b) Special Session 2b – Algorithmic governance, digital sovereignty, and public-private data regimes – Making Public-Private Data Regimes

Chair | Yuko Aoyama (Clark University), Ricardo Barbosa (Clark University), and Matthew Zook (University of Kentucky)

Time slot | 2pm (Monday – November 3)

Room:

The "Actually Existing Urban AI" in Latin American Cities

Adriana de la Peña (Malmö University, Sweden)

Abstract. The deployment of Urban Artificial Intelligence (Urban AI) by local governments in Latin America is accelerating, reshaping urban governance through technologies like facial recognition and municipal chatbots. Yet, despite this rapid adoption, Urban AI in the region remains critically underexplored. Addressing this gap, this paper analyzes original data on Urban AI adoption across the 60 most populated cities in Latin America, investigating the “actually existing” AI within local governance structures and its spatialization. Findings highlight both the agency of cities and the structural forces shaping the implementation processes, particularly the role of powerful actors like Huawei and Meta in promoting automation and datafication. This paper contributes to critical debates on urban digitalization by foregrounding the socio-political dimensions of Urban AI and the global asymmetries shaping its development in Latin America.

Keywords: Urban AI, Local Governance, Latin America

Learning from failed algorithmic governance: Smart city initiatives in Canada and Japan

Yuko Aoyama (Clark University, USA)

Abstract. How to public and private interests coalesce in the age of artificial intelligence (AI), and how best can we design algorithmic governance? Algorithmic governance relies on, on the one hand, proprietary technologies that undergird AI technologies, and protection of public interests through an ethical decision making and data usage on the other. As such, for an urban initiative that seeks to adopt cutting edge technologies, public-private partnerships have become essential for a successful full-scale deployment. However, these partnerships are often tenuous, due to the differences between public vs. private interests over data ownership and transparency of AI-based decision making. In this paper I examine failed cases of Urban AI initiatives in two different geographical, institutional and cultural contexts. In Toronto, Canada, the city’s plan to redevelop its waterfront with Google’s Sidewalk Lab resulted in the Lab exiting the project in 2020. In Susono, Japan, Toyota is proceeding to build “Woven City” on the site of a former automobile assembly plant without the initial plan to coordinate with the City of Susono and its Susono Digital Creative City (SDCC). By comparing these two case examples of failed public-private partnerships, I seek to draw implications of the roles geographical contexts, socio-political-cultural differences and organizational design play on the future of algorithmic governance.

Keywords: Algorithmic governance; public-private partnerships; smart cities; Canada; Japan

Data ecosystems as new paradigm in algorithmic governance. Case study ,Data lake‘ Barcelona

Iris Dzudzek (University of Münster, Germany) and Henning Füller (Humboldt-University Berlin, Germany)

Abstract. Data collections are the foundation for any administration. City administration provides a good example to discern different forms of data collection and storage and its genealogy. From municipal statistics in the modern city, through opinion polls, base maps and GIS to open data and transactional data in near-real time — the data available for a „seeing like a city“ (Valverde 2011) has successively broadened. Recently, there is an important qualitative shift ongoing. Broad and diverse data are increasingly integrated and made available for automated pattern recognition and analysis. The city of Barcelona is a pioneer in open data policies. Since 2018 a dedicated data office is establishing a data ecosystem paradigm throughout the administration. Barcelona is therefore a prime example to detail effects of this new mode of data governance for urban politics. In the talk, we will emphasize implications of the ,data lake‘ approach in Barcelona for the way the city ,sees‘ and answers its problems. The new mode of algorithmic governance establishes a perspective on the city as ecosystem and implicitly suggests a cybernetic form of management. This also shifts the understanding of its democratic foundation. Safeguarding equilibrium and the functioning of the status quo precedes any democratic will-formation. The example allows to substantiate a critique of algorithmic governance ‘on the ground‘.

Keywords: Algorithmic Governance, Data Ecologies, Urban Geography, Urban Governmentality

Negotiating Control: Public-Private Data Regimes in the Digital Urban Planning Tools of Germany and Ukraine

Husain Vaghjipurwala, Hana Elattar, Dayanna de Mello Sousa, and Jörg Noennig (HafenCity University, Germany)

Abstract. Since the early 1990s, digital cadastre systems have become essential tools in urban planning, functioning as part of broader digital infrastructures that reflect national policies and stakeholder dynamics. These systems are not merely technical solutions but instruments to shape socioeconomic transitions, particularly evident in the post-Soviet context of Ukraine. There, urban planning is undergoing a transformation not only toward digitalization but also toward constructing new spatial identities aligned with European norms. At the same time, the shift to decentralized planning regimes is complicated by legacy planning documents and recent geopolitical pressures, such as the Russian invasion, which demand centralized responses. Germany—specifically Hamburg—offers a contrasting model: a bottom-up, decentralized approach to digital cadastre development. As part of the GIZ-funded SURPRISE project, our research explores knowledge transfer between German and Ukrainian systems, focusing on the Urban Planning Cadastre (UPC). We analyze the frameworks governing data structures, stakeholder hierarchies, and public-private data regimes, revealing how different actors shape the planning process. In Ukraine, the intersection of state-led reforms and emerging local initiatives presents both friction and opportunity for integrating public and private data infrastructures. Our digital maturity assessment in four Ukrainian cities (Vinnytsia, Chernivtsi, Poltava, Zhytomyr) identifies integration potentials and alignment strategies. Ultimately, we propose an evaluation methodology to assess transparency, digital maturity, and collaborative capacity—key to understanding how cadastre systems support centralized or decentralized planning goals and manage the balance of control between public and private data regimes.

Keywords: Decentralisation; Digital Cadaster Systems; Planning Infrastructure; Stakeholder Hierarchy; Digital Maturity

AI and Alternative Geographies of Democracy

Yu-Shan Tseng (University of Southampton) and Steve Pile (The Open University, UK)

Abstract. AI has reshaped public discourse and imaginaries of democracy. In mainstream media and research, AI is often portrayed as a threat to democracy because it amplifies democratic challenges, such as a decline of trust in electoral politics and a rise in information manipulation, political polarisation and so on. However, for some practitioners, AI is not inherently anti-democratic. Instead, they see AI as a technology that can enable alternative modes of democracy: enhancing participation, deepening deliberation and providing greater legitimacy. In this paper, we explore how AI is being used to generate new modes of democracy. It does so by offering different methods of participation, deliberation and aggregation of people's opinions or votes. In doing so, AI facilitates new and alternative geographies, temporalities and imaginaries of democracy. At the same time, it can intervene in or interfere with existing democratic models, such as citizen assemblies, town halls and various forms of policy-making. We analyse how these alternative geographies, enabled by AI, bring up new opportunities for addressing and (re)envisioning current democratic challenges that are otherwise not possible. To illustrate our analysis, we present two empirical examples that employ cutting-edge AI technologies—machine learning algorithms and blockchains—in democratic participation: Extinction Rebellion's Massembly in Windsor, which uses the AI-powered platform Pol.is, and the early development of the London Voice platform, which integrates blockchain and large language models (LLMs). Each example showcases a distinctive way that AI is used in reimagining and reconfiguring democratic geographies, from decentralisation to redistribution.

Keywords: democracy, democratic participation, democratic imaginaries, alternative geographies, AI

(SS5b) Special Session 5b – Putting Information into Spatial Structures: Approaches in Localising Information and Knowledge

Chair | Balázs Cserpes, Katharina Borgmann, Benjamin Dally (HafenCity University Hamburg)

Time slot | 2pm (Monday – November 3)

Room:

From Text to Spatial Governance: Geoparsing in Spatial Decision Support Tools

Benjamin Dally, Juan Hernandez Leal, Juiwen Chang, Muhamad El-Fouly, Jörg Rainer Noennig (HafenCity University Hamburg, Germany)

Abstract. This talk investigates how digital methods and tools, especially Geoparsing and interactive spatial Decision Support Tools (DST), are able to change the way urban knowledge is created, shared, and used within city administrations. While these tools are often praised for making complex data more accessible, we argue that they also shape what kind of urban knowledge is seen as valid and actionable. Here we are especially interested in Geoparsing as a technology to retrieve spatial information from diverse types of media, like news articles or council minutes, whose accessibility for spatial development processes is often limited. We further discuss, how integrating Geoparsing data into a DST can help to improve planning processes in urban development and land development, and what is the state of art of using these methods. The underlying conceptual ideas have been incorporated into the development of the AGORA toolbox, a prototype of a DST for the allocation and qualification of locations. Based on this case study, we discuss implementation and evaluation with different audiences. In our experience, these tools and methods are promising to

help mapping social and political dynamics in the city. They don't just reveal local debates, but also change what kinds of places are noticed or prioritized by planners. We therefore reflect on their deeper implications: how they shape not only what we see, but what we act on. In doing so, this work contributes to critical conversations in digital geography about how cities are being reimagined and governed through data.

Keywords: Decision Support Tools, Geoparsing, urban data, land scarcity, location finding

Predicting Material Composition of Walls and Floors using Machine Learning

Wolfgang E., Lorenz *et al.* (TU Vienna, Austria)" to "Gabriel Wurzer *et al.* (TU Vienna, Austria)

Abstract. In the context of Urban Mining, it is essential to know the material composition of the building stock. In our project M-HUB (Data hub for the collection and viewing of material compositions of the building stock of the City of Vienna), we have thus worked on ways of learning material compositions from samples taken in buildings of various periods. We employ machine learning (e.g. random forests) to predict wall and floor compositions and use these in connection with the building footprint for extrapolation. As shown, our results closely match the ground truth (more than 80 percent accuracy, depending on building period). As a matter of fact, we can infer the material composition of the urban building stock even for buildings that have not been surveyed. Additionally, we also sample building elements (e.g. windows, doors) that can be reused or repurposed; we learn to predict the existence of such elements in the same fashion. As to the applicability of our data hub, we target real estate developers, municipalities and planners. The first ones need an estimation of how much material and what kind (contaminants!) one would incur in renovation and demolition; municipalities might be interested in the same information, but on an aggregate level. And lastly, architects might also want to incorporate "waste" material or elements into their design, so as to decrease their carbon footprint (e.g. by using old bricks, wooden beams or doors and windows).

Keywords: Machine Learning, Urban Mining, Material Compositions, Data Hub

Space-Time-Sustainability (STS) Metabolisms in Urban Food Environments

Merle Müller-Hansen *et al.* (University of Augsburg, Germany)

Abstract. This study applies Space-Time-Sustainability (STS) metabolisms to food environment research, advancing the understanding of socio-economic group differences in the sustainability of urban food consumption. Using 3D animated STS Cubes to analyse GPS data, a quantitative survey, food diaries, and qualitative interviews, complemented by anthropometry measures and blood markers, the research models individual food consumption within multi-scalar socio-ecological metabolic processes. A case study in Hyderabad, India, demonstrates how STS Cubes highlight spatial and temporal disparities in the urban food consumption metabolisms across socio-economic clusters, embedding their different CO₂-equivalent emissions within interconnected metabolic flows. By mapping food environments as interfaces between individual practices and systemic dynamics, this work underscores the micro-, meso-, and macro-level relationships shaping these urban food metabolisms. Extending beyond physical resource flows, they encompass digital, corporeal and visceral, and discursive dimensions of food environments, offering a broadly applicable cellular-to-social metabolism framework for sustainability. Finally, this approach promotes socio-environmental justice by proposing data supported group-, time-, and location-specific transitions within urban sustainability transformations.

Keywords: Qualitative GIS, Space-Time Cube, Deep Mapping, Socio-Economic Groups, Sustainability Metrics

(SS6) Special Session 6 – Methods, Tools and Skills to Open the Black Box: Exploring Knowledge Transfers in Digital Geographies

Chair | Leah Aaron (University College London, UK) and Myriam Boualami (Université Paris 1 - Panthéon-Sorbonne, France)

Time slot | 2pm (Monday – November 3)

Room:

Framing 'Peak Accessibility' in the Black Box: Re-evaluating knowledge from transport modelling

Claude Lynch, Adam Dennett, Esra Suel, and Gerry Casey (University College London, UK)

Abstract. This abstract regards the nature of the 'black box' in relation to transport modelling, where there is frequently a deficit between the vast quantity of data fed into increasingly large models and the extent to which those models' outputs are understood; it is well accepted that across the sector, there is more to do in building the knowledge base for these models outside those who directly contribute to building them (Batty, 1994). Following up on that knowledge question, there is the query of how we interpret what transport models tell us. The traditional interpretation has been that their results are to be turned over into cost-benefit analyses, further obfuscating what happens inside the black box through 'value of time' (Metz, 2024) and other econometrics. I argue that there are new modelling paradigms on the horizon that – if interpreted carefully – can move us away from this set of problematic assumptions about the model : society binary. In a world of 'decide and provide' (Marzano, 2024), deep uncertainty (Fiori et al., 2024), and datafication (Ferreira, 2022), I contend that our digital tools should push beyond representing the world as it really is. Instead, they should aim to simulate the world in ways that we wouldn't otherwise imagine it. My core example considers the theoretical potential of giving each simulated 'agent' in a transport model the same 'travel plan' irrespective of their characteristics, one that incorporated each of the elements we would expect for a baseline of 'human flourishing' (Sen, 1999; Beyazit, 2011).

Keywords: Transport Justice, Critical GIS, Transport Models, Datafication, Theories of Knowledge, Mobilities

Navigating the Modern Streetscape: Enhancing Independent Mobility for Visually Impaired People through Digital Tools

Craig Smith (University College London, UK)

Abstract. Visually impaired people (VIP) face persistent barriers to independent travel in urban environments. As cities evolve to meet sustainability goals, infrastructural change often excludes VIP whilst presenting new barriers, compounding challenges in mobility, safety, and inclusion. This research explores how digital tools—specifically a bespoke navigation app—can bridge the gap between infrastructural limitations and accessible travel for VIP. Grounded in the social model of disability, this multi-stage study combines qualitative interviews, physiological testing, walk-along mapping, app development, and immersive education to understand and improve VIP mobility. Interviews and experimental trials identify anxiety-inducing elements of travel, while GIS-mapped cognitive journeys reveal how VIP navigate familiar routes using sensory and spatial cues. These insights guide the design of a prototype app tested in virtual simulations using real-world footage, enhancing safety and engagement without physical risk. The final stage develops an immersive VR educational tool for transport planners, simulating VIP experiences to foster inclusive urban design

practices. This research contributes new knowledge at the intersection of disability studies, digital geography, and transport planning, advocating for technology-driven solutions that centre lived experience and autonomy.

Keywords: Visual impairment, digital accessibility, urban mobility, app, immersive learning

Scrolling back, scrolling through: using digital and social media methods to understand refugee resettlement

Charishma Ratnam (Royal Melbourne Institute of Technology (RMIT University), Australia)

Abstract. Rapidly evolving digital technologies are transforming refugee resettlement in host countries. International research now focuses on refugees with high levels of smartphone use to examine how they negotiate host countries in new ways. As such, the interdisciplinary field of ‘digital migration studies’ is flourishing, with scholars, including geographers, pursuing new research pathways and methodologies. In this paper, I will share methodological insights from a project that explored how Sri Lankan refugees used digital technologies – smartphones and digital applications – during resettlement. I adapted and integrated the ‘social media scroll back method’, which involved participants scrolling back and through a social media platform of their choice, to understand how they captured, documented, and shared their resettlement experiences in Sydney and Melbourne, Australia. While the method offered rich findings related to hopelessness and helplessness and spurred memories of home and family, implementing the method came with a range of ethical questions and emotional challenges. As such, in this paper, I reflect on the challenges and learnings of integrating digital and social media methods into research with refugees who face significant precarity and adversity. Indeed, there is merit to integrating such methods into research; digital geographers are attuned to the patterns, textures, and dimensions of everyday digital life for refugees, and understand that resettlement is increasingly digitally mediated. However, I argue that there are critical issues need to be addressed, including care for participants navigating a new and unfamiliar digital method of data collection.

Keywords: Refugee resettlement, digital methods, social media methods, scrolling, reflexivity

The spatialities of the “civic blockchain”: socio-spatial implications of tokenised social economies

Cristina Viano (University of Turin, Italy)

Abstract. Digital platforms are embedded in urban contexts not only as regards smart cities infrastructures, e-government processes, and corporate sharing economies, but also in grassroots or alternative forms of digital urbanism (Lynch, 2020; Vadiati, 2022). This contribution focuses on how the peculiar properties and affordances of blockchains (e.g. disintermediation, automation and tokenization) can intersect with urban participatory and civic initiatives. The exploratory case study for this research is an experimental project about the co-design and testing of a blockchain-based wallet app aimed at supporting social collaborative economies through the tokenization of social and economic assets. A “geography by the digital” (Ash et al, 2016) perspective is adopted with two purposes: first, to investigate the implications and effects that this kind of application can have on socio-economic interactions, spaces and spatialities of social economies in urban communities. Second, to understand how participatory and interdisciplinary research on civic technologies can be framed in order to codesign digital platforms that are embedded in the actual needs of local communities. The “reading for difference” approach (Gibson-Graham, 2008) applied to digital technologies (Lynch, 2020; Santala and Mc Guirk, 2022; Certomà, 2023) is adopted to understand how the blockchain properties can be re-oriented from speculative cryptocurrencies to social

economies, with different combinations of transactional, transformational and relational approaches; of market-based and community-based logics; of economic, social and moral incentives.

Keywords: Civic Blockchain, Tokenisation, Social economies, Reading for difference

Mapping the Margins: Digital-Ethnographic Approaches to Knowledge Transfer in Iran's Digital Geographies

Shahriar Khonsari (Veno Art, Poland)

Abstract. Based on an ethnographic study, this research gives insights on the various ways in which the digital-geographic techniques can be utilized to study the knowledge transfer in the contested terrestrial web of Iran, where the government's restrictions, the limitations of the infrastructure, and innovations at the grassroots level characterize digital space interactions on a daily basis. Moreover, the article examines to what extent the skills that are purely digital, for example, navigating a VPN, communication that is encrypted, and selecting the content on social networking sites, are freely exchanged among peers, passed down from older to younger generations, and through self-paced regenerative processes. Conducting such a study has become possible thanks to the use of a combination of digital walkthroughs, augmented interviews, and participatory mapping. The explorations were about different ways of learning and practicing "digital capital" in circumstances marked by control and watchfulness. In the "Voice and representation" part, the researchers present some of the dilemmas faced while working under unclear situations with enormous stakes, such as data keeping, the researcher's personal security, and the ethical personal stance. They insist that the disclosure of digital geographies in Iran not only eliminates the mysteries but also introduces a fresh perspective from which to understand the unevenness of the digital landscapes and to explore methodological pluralism and epistemic justice in the new field of digital geography. This work is designed to invite people from diverse backgrounds and different parts of the world to interact and to illustrate the necessity for toolkits to be readily adjustable and responsive to the digital-geographic investigation's contextual requirements.

Keywords: Digital-Ethnography, Knowledge Transfer, Iran, Digital Geographies

It's a mess: Researching the urban tech communities in Denmark and Sweden amid technological hype and undocumented certainty

Emil Nörager Kruse and Maja de Neergaard (Roskilde University, Denmark)

Abstract. During the late 1990s and early 2000s, methodological debates within Geography concentrated on the need to re-materialise the discipline (Jackson, 2000; Philo, 2000; Lees 2004) and developing human geography's methodological toolkit. The cultural turn and its reliance on textual analysis and qualitative interviews had "ended up becoming less attentive to the 'thingy', bump-into-able, stubbornly there-in-the-world kinds of 'matter'" (Philo, 2000: 33). And now for little over a decade, the new major focus for methodological experimentation and development in human geography concerns Big Data and digital technologies, i.e. the digital turn (Ash et al., 2016). Both instances of methodological discussion revolve around the methodologies applied as well as the geographies of study, i.e. the empirical phenomena. In the present case, the emergence of digital geographies begs methodological questions by confronting us with new composite and complex realities as well as with new types of data. In this paper, we want to discuss the highly composite, complex and somewhat 'messy' nature of a particular digital geography – namely the urban tech community in Denmark and Sweden. In the aftermath of the hype around 'smart cities', new hypes developed around AI, digital twins and climate smart solutions. We show how this development in

large part is driven by a 'community' of start-ups, committed individuals and enthusiastic city officials developing alongside EU legislation, private/strategic funding and several elusive narratives, buzz-word exclamations, and floating discourses. All pathways to 'greener' and more sustainable futures. During our empirical gathering, we have actively engaged with the community, followed how pilot projects come about, and participated in industrial conferences. We have experienced how idealised narratives accompany the digital technologies but also how the community itself describes sensations of exhaustion, irony and mistrust in (some) of the hype and its disability to deliver promising outcomes. Through an ethnographic lens, we reflect on our own positionality but also on the 'flimsy' and messy nature of the community under study. Indeed, all research can only ever obtain fragments of a phenomenon, but this phenomenon does indeed seem intensely fragmented in and of itself. Our aim is thus to increase our understanding of the epistemological intricacies involved in this type of digital geographic inquiry – as we aim to un-black box what the field itself continues seem to re-black box.

Keywords: Messiness, technological hype, smart city, urban digital technologies, epistemological intricacies

(RS2) Regular Session 2 – Platforms and urbanisms

Chair | Luís Carvalho (University of Porto)

Time slot | 2pm (Monday – November 3)

Room:

Digital transformation in medium-sized cities

Holger Kretschmer (University of Cologne, Germany)

Abstract. In recent decades, digitalisation has become a permanent driver of urban development processes. At global, European and national levels, digital transformation - the fundamental change of processes and strategies through the use of digital technologies - is a central element of future urban development. It offers cities the opportunity for sustainable development, as it aims to find resource-efficient and demand-driven solutions to key challenges in urban development. Therefore, Digital transformation must be anchored in comprehensive processes of municipal governance structures. Despite a normative framework in the Smart City Charter, German efforts to transform municipalities are considered slow and behind schedule. Furthermore, it can be observed that digitisation strategies were first developed and tested in large cities and metropolitan regions, and that the transformation of small and medium-sized cities is only slowly becoming the focus of academic, political and applied attention. However, it seems important to broaden the perspective, because more than two-thirds of the population in Germany does not live in large cities. In order to gain an overview of the specific requirements of medium-sized cities, a qualitative case study was conducted to examine the special needs of digitisation and smartification in small and medium-sized cities using the example of North Rhine-Westphalia, Germany. Based on qualitative

expert interviews, the state of digitisation was recorded and the specific challenges in the field of digitisation strategies were identified. The planned presentation will show the specific challenges of digitalisation in the mentioned cities and how these challenges are being met in different ways.

Keywords: Smart City, governance, urban development

Algorithmic Frictions and Their Discontents: Mapping Fissures and Glitches in Platform Urbanism

Nuno Rodrigues (DINÂMIA` CET-Iscte, Portugal)

Abstract. This paper proposes a theoretical-conceptual reflection on the functioning of algorithmic forms of mediation and management in the context of the gig economy, taking as its point of departure the concept of algorithmic frictions and its articulation with other emerging approaches in the field of digital geographies. Building on Anna Tsing's proposal, algorithmic frictions are understood as unstable, unequal and potentially creative encounters between supposedly universal algorithmic systems and the local materialities in which they are enacted. This perspective allows us to explore the tensions between structure and agency, to challenge totalising visions of forms of mediation and algorithmic management, and to highlight the situated practices through which subjects make, unmake and reconfigure systems. In dialogue with this conceptual proposal, the concepts of fissures and glitches have gained prominence as analytical lenses that also seek to make sense of the necessarily fallible and contextual relations that emerge from the relationship between algorithmic systems and the contexts of their implementation. Placing these conceptual approaches in tension and complementarity, we propose a relational reading of algorithmic frictions within digital geographies that problematises potential 'errors' not only as symptoms of failure or possible domination, but also as possibilities for the production of agency, knowledge, and contestation. Thus, we argue that algorithms and digital systems should be understood as devices that are intersected by various tensions and conflicts, and whose 'errors' say as much about their modes of operation and effects as they do about the possibilities for contesting and inhabiting them.

Keywords: Platform Urbanism, Algorithms, Frictions, Fissures, Glitches

Renting the Way Out: On Social Digital Twin and the Hidden Pathways of Resident-led Social Mobility in the Urban South

Meirav Ahron Gutman, Batel Yossef Ravid, Shahar Haskell, Ido Ram, and Assaf Avrahami (Technion – Israel Institute of Technology, Israel)

Abstract. This study offers a dual contribution: advancing methodological tools for social research and providing a thematic intervention into urban development theory. Using a social digital twin—hyper-realistic, data-driven 3D city-model with AI-assisted spatial analysis—we examine hidden forms of social mobility in a long-neglected neighborhood of the urban south, marked by decades of legal ambiguity and planning exclusion. In this neighborhood, where land registration remains unresolved and formal development has stagnated, residents have devised off-the-books strategies to reshape their economic and spatial futures. Our findings reveal that second-generation residents are at the forefront of this transformation: by subdividing inherited apartments and renting out small units to refugees and migrant workers—many undocumented—they create informal housing economies that support their own upward mobility and enable them to leave the neighborhood. We ask: how can social digital twins confront the planning blind spots of the urban South, where informality, migration, and spatial violence dominate? While mainstream critiques portray big data

and AI as tools of surveillance and corporate control, we argue that—when socially reappropriated - they can enhance critical urban knowledge. By building a database of over 400 variables, organized by the urban block as the primary unit, and analyzing it through AI algorithm (WizWhy), we uncover granular patterns of spatial improvisation. These insights point toward self-organization not just as a survival strategy, but as an emergent logic of urban planning—one that challenges linear models of renewal and centers residents as producers of space, value, and future imaginaries.

Keywords: Social Urban Digital Twin; Degrowth Urbanism; Critical Algorithmic Correlation; Urban Data Analysis; Socio-spatial Segregation; Marginalized Neighborhoods

Platform Urban Revanchism: Citizen-Policing, Surveillance, and Gentrification

Pascale Joassart-Marcelli and Fernando J. Bosco (San Diego State University, USA)

Abstract. Gentrification scholars have understood surveillance and policing as necessary steps to ensuring the safety of investments in “risky” areas. Globally, zero-tolerance policies have criminalized practices perceived as socially disruptive, cleansing neighborhoods of undesirable elements and priming them for gentrification. Punitive, if not revanchist, state-sponsored policies against poor and racialized residents have historically been enforced by the police, with support from property owners who view begging, loitering, and other nuisances as threatening their investments. In an era of platform urbanism, neoliberal austerity, and police reforms, the role of citizens in policing the city has expanded. Digital technologies enable people to report homelessness, graffiti, noise, and other “public space anomalies” and “incivilities” in a few clicks. This could be interpreted as “smart urbanism” which empowers citizens to participate in the everyday management and policing of their cities, enhancing both efficiency and democracy. However, because these citizen complaints are anonymous, self-interested, contingent upon technology access, and fed into algorithms, they may lead to uneven policing and reproduce socio-spatial structures of urban inequality.

We examine records from “Get It Done” and “Dans Ma Rue” – citizen complaints applications recently launched in San Diego and Paris – to understand their role in policing the city and making it investable. We use mixed methods, including mapping of complaints and census data and qualitative analysis of citizen reports to explore the geographic relationships between complaints, class, race, and gentrification in cities where social dynamics, state surveillance, the role of the police, and poverty management differ.

Keywords: Gentrification, policing, platform urbanism, surveillance, order-maintenance

Tech Platform Governance in the Global South: A Comparative Analysis of Digital Sovereignty Construction in Asia, Africa, and Latin America

Yuyun (Ana) LI (King’s College London, UK)

Abstract. The rapid expansion of digital technologies has allowed transnational tech platforms to deeply influence the social, economic, and political landscapes of Global South countries. This transformation has raised critical questions about who controls data, how platforms should be regulated, and what role governments can play in governing these powerful actors. This paper investigates how selected countries in Asia, Africa, and Latin America are responding to these challenges. Through comparative analysis of policy approaches and institutional adaptations, the study reveals both the innovative strategies emerging from the Global South and the structural barriers these nations face. While often disadvantaged in global tech governance, these countries are developing distinct solutions shaped by their local contexts and development priorities. The research highlights how Global South nations are negotiating their place in the digital order, not

simply as rule-takers but as active participants crafting alternative governance models. These findings contribute to ongoing debates about making digital governance more inclusive and responsive to diverse global realities.

Keywords: Digital Sovereignty, Global South, technology platform governance, Latin America

“Uber-style technology” and the production of the human and its others

Vignesh Ramachandran (University of Wisconsin-Madison, USA)

Abstract. This paper is concerned with the continuities of predictive algorithms between Uber’s food delivery platform and the US Department of Defense’s development of Joint All-Domain Command and Control (JADC2). It asks why does ordering food on Uber become the metaphor (and method) to automate the process of dropping bombs in a warzone? The DoD’s use of “Uber-style technology” goes beyond the platform metaphor and business model to articulate the usage of Uber-style machine-learning algorithms across defense applications— identifying targets, recommending optimal weapons, and engaging targets. Drawing on the posthumanist feminist work of Sylvia Wynter and Wendy Hui Kyong Chun, this paper considers how such machine learning algorithms do not predict the future, but rather “put the future in its place” (Chun and Cotte 2020; Chun 2024). This process is underscored by the production and maintenance of what Wynter describes as “culture specific governing codes” that allocate hierarchies of value, defining and reproducing notions of the “human” (Man) and its “non-human” others (the surplus, disposable, wretched of the world) (Wynter 2013). In Uber’s case, an algorithm’s ability to “predict” estimated time of arrival is made possible by the vast network of algorithmic and material processes—surveillance infrastructures, incentivization schemes, punishment protocols—that produce workers’ group-differentiated vulnerability to premature death and disability, encoding hierarchies of value and humanness in the process. This paper works through how “Uber-style technology” (inclusive of the platform model and its underlying machine learning algorithms) operates to reproduce these “culture-specific governing codes” across its applications in food delivery and warfare.

Keywords: Uber, platform economy, machine learning, Department of Defense

(RS3) Regular Session 3 – Perspectives on Digitalisation

Chair | Paulo Morgado (University of Lisbon)

Time slot | 2pm (Monday – November 3)

Room:

Benefit if you can – systematic literature review on the role of artificial intelligence (AI)-related technologies for smallholder farms in Europe

Sonja zu Jeddelloh and Amelie Bernzen (University of Vechta, Germany)

Abstract. Global food systems are under increasing pressure to meet food and nutrition security targets (Sood et al., 2022). Thus, agriculture has started to develop a digital identity using digital technologies, and recently, in combination with artificial intelligence (AI)-based solutions (Dara et al., 2022; Sood et al., 2022). Terms such as Smart Farming, Smart Agriculture, and Digital Agriculture are not always clearly distinguished (Lioutas & Charatsari, 2020; Regan, 2019; Sood et al., 2022). However, it promises increased productivity and the development of more sustainable agricultural

and food systems (Mărculescu et al., 2024; Zscheischler et al., 2022). AI-based solutions can influence farmers' (complex, multicausal) decision-making process by identifying optimal time and soil conditions for sowing and irrigation, or by integrating different data sources, like weather, farm, and historical data (Dara et al., 2022; Regan, 2019; Sood et al., 2022; Zscheischler et al., 2022). Farmers play a major role in the development of these technologies as they are at the same time user and developer (Kerneck et al., 2021). However, existing literature has given little attention to how the adoption, benefits, and risks of AI-driven technologies in agriculture may play out differently among large agribusinesses and smallholder farms. Through a systematic literature review, this paper analyzes the relevance of AI-related technologies for European smallholders. Preliminary results suggest that few smallholders are digitalized and face challenges in adopting AI technologies, possibly due to financial reasons or due to a reluctance towards their complexity and difficulties in proper use (Eli-Chukwu, 2019; Gabriel & Gandorfer, 2023).

Keywords: Smallholder farms, artificial intelligence, Europe, smart farming

The Role of Digitalization in Energy Transitions: How Digital Business Models Reshape Power in the German Electricity Sector

Leonie Büttner (Helmholtz-Zentrum für Umweltforschung - UFZ Leipzig, Germany)

Abstract. In Germany, flexibility has become a central theme in energy policy debates. Decentralized, spatially unevenly distributed and volatile renewable energies, as well as the increasing electrification of the transportation and heating sectors, pose significant challenges to the electricity system. In addition to the expansion of physical infrastructure, the promotion of decentralized flexibility is increasingly becoming the focus of energy policy strategies. Digital business models such as flexibility markets, dynamic electricity tariffs, and energy sharing are being discussed, tested, or already implemented in this context. However, the concrete implications of these business models on the future electricity system are far from clear. Based on a discourse analysis of documents and expert interviews, this paper analyzes the motives and rationales behind the digital business models being tested in German digitalization initiatives aimed at procuring decentralized flexibility, and examines the implicit rationalities, underlying logics, and power effects embedded within them. Building on Foucault's concept of governmentality, the paper understands digital business models as "technologies of power" that reconfigure existing power and knowledge orders in the energy system and produce new forms of governing, (collective) agency, cooperation, and exclusion. The ultimate goal is to gain a deeper understanding of the emerging sociotechnical configurations of digitalized energy systems in Germany, and to critically reflect on their potential implications for the direction of the energy transition.

Keywords: Digitalization, Energy Transition, Digital Business Models, Foucault, Power

Cloudpolis: Cloud computing and infrastructure-led development in China

Yawei Zhao (University of Manchester, UK)

Abstract. China has experienced a rapid expansion of its digital economy over the past two decades, with a rising demand for cloud computing anchored by digital data centres. Through document analysis and semi-structured interviews, this paper investigates how data centre investments have become a new development engine for China's designated New Urban Areas, especially since the launch of the Eastern Data, Western Computing programme that seeks to transfer data storage and processing from eastern to western regions. This paper highlights that New Urban Areas where data centres concentrate increasingly resemble technopolis due to their technological orientation, yet they exhibit unique characteristics shaped by the operational demands of data centres, such as high energy consumption and reliance on a favourable climate. By proposing the term 'Cloudpolis', this

paper delivers insights to the emergence of cloud computing-driven urban forms in the era of digital transformation.

Keywords: Digital infrastructure, urban development, statecraft

“The cloud” of Attica: Exploring the investments of tech giants in the Data Center sector

Georgios Bougioukos (National Technical University of Athens, Greece)

Abstract. The third decade of the 21st century is marked by the internet’s domination, and the exponential growth in the production—and value—of digital data. By the mid-2000s, the internet had already reached a mature stage of development. On the one hand, the number of active users worldwide had surpassed one billion, and on the other, its physical infrastructure had begun to expand globally. Furthermore, this decade saw the emergence and consolidation of Cloud computing technology, enabling remote data processing and storage as well as the provision of computing power from a distance. This development was preceded by the extensive deployment of fiber optics (submarine and underground cables, which to this day handle 99% of global digital data traffic). As the demand for better, cheaper, and more efficient data storage and management grew, many companies and organizations turned to outsourcing—entrusting their data management to other companies, that developed specialized infrastructures equipped with advanced technical equipment and support systems (cooling, security, power supply, and fire suppression systems). These infrastructures are the Data Centers (henceforth, DCs), and we will attempt to provide a concise overview of them, making them one of the most critical infrastructures of the 21st century.

Keywords: Microsoft, Data Center, Greece, Spata

Spatiotemporal Predictive Analysis of Urban Flood Risks from River Flooding, Drain Overflow, and Seawater Intrusion under Land Subsidence in Jakarta

Jin Rui, Zahratu Shabrina, and Emma Colven (King's College London, UK)

Abstract. As the largest coastal metropolis in Southeast Asia, Jakarta has experienced intensified land subsidence driven by excessive groundwater extraction, leading to increasingly complex spatiotemporal coupling between river flooding, drain overflow flooding, and seawater intrusion during extreme rainfall events. Based on multi-source, high-resolution spatiotemporal datasets—including InSAR-derived subsidence rates, rainfall intensity, water gate levels data, and sea level rise model from 2016 to 2024—this study constructs an integrated data framework and proposes a hybrid CNN–Bidirectional LSTM predictive model. The model employs multiple convolutional layers to automatically extract spatial heterogeneity features, followed by bidirectional long short-term memory networks to capture contextual temporal dependencies. Model performance is systematically evaluated using sliding-window cross-validation combined with RMSE and AUC-ROC metrics. A compound flood risk index, integrating topography analysis and socio-economic and demographic data, is constructed to identify high-risk hotspots within subsidence-prone and densely populated urban areas. Predictive results indicate that rising subsidence rates are expected to lower the critical thresholds for seawater intrusion, while extreme rainfall events will likely induce a nonlinear acceleration in river flood expansion. These types of flooding events are projected to increasingly overlap during certain periods, exacerbating urban flood severity in the core areas of Jakarta. This study aims to provide quantitative evidence and strategic insights for dynamic flood risk management and urban resilience planning in Jakarta and other subsidence-vulnerable coastal cities.

Keywords: Land subsidence; urban flooding; spatiotemporal prediction; bidirectional LSTM; urban resilience

Sustainability Challenges and Solution Pathways: A Meta-Perspective on Transdisciplinary Urban Research in SEA and China

Agota Barabas, H. Dörrich, K. Borgmann, H. Vaghjipurwala, and R. Noennig (HafenCity University, Germany)

Abstract. Mounting climate-related impacts—such as intensifying heatwaves, flooding, and resource shortages—underscore the urgency of urban adaptation. Addressing these interconnected challenges demands innovative knowledge production and decision-making, emphasizing the role of transdisciplinary and participatory approaches that engage non-academic stakeholders. Such collaboration fosters practical insights, integrates diverse values, and co-creates actionable solutions, advancing transformative climate resilience and sustainability outcomes. From 2020 to 2025, we conducted a meta-analysis of ten transdisciplinary projects under the German-funded Sustainable Development of Urban Regions (SURE) program, implemented in Germany, Southeast Asia, and China. These projects addressed themes like nature-based solutions, disaster risk management, and sustainable urban-rural planning, offering cross-cultural insights into climate-resilient development. Our study aimed to (1) identify recurring problem-solution patterns and tools linked to localized Sustainable Development Goals (SDGs) and (2) map actionable knowledge for practitioners and policymakers. Guided by a transformation-oriented framework, we analyzed five key elements: stakeholder diversity, societally relevant challenges, mutual learning, solution-oriented knowledge, and iterative research design. Cross-cutting issues—epistemological diversity, power dynamics, and cultural inclusivity—were also examined. Adopting a “research on research” approach revealed methodological gaps, innovative strategies, and pathways for mitigating climate risks. Key findings highlight that transdisciplinary co-creation, despite governance constraints, enables meaningful dialogue and practical solutions. Projects demonstrated capacity-building, tool innovation, and network development, though long-term impacts (2025–2028) remain to be seen. Cross-case analysis revealed shared and context-specific socio-environmental challenges, offering lessons for balancing rigor with inclusivity. Ultimately, we synthesize these insights into a “knowledge bank,” outlining strategies and stakeholder networks to align urban planning with adaptation goals. By bridging research and practice, this study strengthens equitable, sustainable resilience and advances adaptive planning discourse."

Keywords: Transdisciplinary Research; Transformation knowledge; Problem-Solution Pathways; Sustainable Development of Urban Regions

4pm – Coffee Break

4:30pm – Workshop:

Rethinking Statuary in Digital Geographies: a speculative design workshop

Organiser | Tiago Mindrico and Ana Lúcia (LARSyS, Interactive Technologies Institute (ITI) & Faculty of Fine Arts, University of Lisbon, Portugal)

Room:

Tuesday (November 4)

9am – Parallel Paper Sessions

(SS2c) Special Session 2c – Algorithmic governance, digital sovereignty, and public-private data regimes – Digital Representation and State Power

Chair | Yuko Aoyama (Clark University), Ricardo Barbosa (Clark University), and Matthew Zook (University of Kentucky)

Time slot | 9am (Tuesday – November 4)

Room:

The Fragmented Stack. How States are Trying to Reshape Global Connectivity

Maurilio Pirone (University of Bologna, Italy)

Abstract. This presentation examines the tensions between digital flows and national sovereignty, focusing on how global supply chains underpin digitization and complicate efforts at securitization. While a decade ago the paradigm of connectivity (Khanna, 2016) envisioned a borderless world driven by seamless digital exchanges, the internet served as a powerful metaphor for this transformation. Theoretical models like Bratton's Stack (2015) largely sidelined the role of the state in shaping digitization and globalization. However, growing critiques (e.g., de Seta, 2021) emphasize that interactions between these layers are far from frictionless and are often influenced by state interventions. Additionally, challenges such as resource access and logistical conflicts reveal digitization as an uneven and fragmented process. This analysis argues that recent global crises—including the COVID-19 pandemic, the wars in Ukraine and Palestine—have disrupted this vision, exposing vulnerabilities in digital infrastructure. States have prioritized the securitization of supply chains and the militarization of digital technologies, yet achieving these goals remains elusive due to dependencies on transnational elements such as device manufacturing, raw material access, and network effects. Ultimately, this presentation contends that the ongoing tensions between capital's spatial dynamics and state territoriality are unlikely to lead to decoupling or independence. Instead, they risk exacerbating global instability.

Keywords: Connectivity, state, digitization, supply chains, sovereignty

Taking the Surveillance State to Court: Navigating Trans/national Data Regimes in Pakistan

Heba Islam (Johns Hopkins University, USA)

Abstract. This paper draws on nine months of PhD dissertation fieldwork among digital rights advocacy groups in Pakistan to explore how legal professionals interpret and navigate broad, ambiguous laws governing cybercrime, AI deep fakes, "fake news", and online "treasonous content." The vagueness within cybercrime laws justifies ever-expansive state surveillance and enables broad interpretation and use, creating an elasticity within the law that digital rights advocates argue help prop up an ever-expansive surveillance state. The paper focuses on two key aspects of Pakistan's cybercrime laws. I first examine how lawyers attempt to harness contradictions within a still nascent legal landscape around surveillance to their advantage; for

example, by drawing on the Pakistan Constitution to point to provisions for the right to privacy as well as the EU's Data Protection law as a potential benchmark. Secondly, I ask how lawyers reckon, affectively and professionally, with a central paradox in their work: Seeking legal recourse against state tactics of monitoring civilian populations when extralegal measures of surveillance comprise a large part of digital surveillance regimes. I aim to address two central questions: To what extent is digital rights advocacy successful when networks of national and transnational data regimes develop alongside local extralegal measures such as internet blackouts and social media bans? And do digital rights advocates become unintentionally imbricated in the state's efforts at expanding its surveillance regime through legal reform?

Keywords: Digital surveillance, state censorship, AI governance, legal reform, digital rights advocacy

Algorithmic Infrastructures and Digital Sovereignty from Below: The Politics of Resistance in Myanmar's Conflict Zones

June Wang (City University of Hong Kong, China)

Abstract. This paper explores how digital infrastructures are mobilized as instruments of resistance and governance in Myanmar's conflict-affected borderlands. Moving beyond views of cyberspace as an extension of physical territory, we examine how digital platforms—particularly VPNs, encrypted messaging apps, and social media—constitute what Ash et al. (2018) and Graham et al. (2015) call algorithmic spaces of governance. Drawing on field-informed analysis of Myanmar's post-coup conflict zones, the paper shows how pro-democracy actors and ethnic armed groups use digital tools not merely for information dissemination, but as critical infrastructures for organizing resistance, circumventing state censorship, and sustaining political mobilization under authoritarian surveillance. These algorithmic infrastructures allow resistance actors to coordinate across fragmented geographies, manage secrecy, and perform alternative sovereignties in and through digital space. In turn, the military regime has escalated its digital countermeasures—blocking internet access, tracking VPN traffic, and deploying cyber surveillance—revealing a techno-political arms race in the making. The paper argues that digital sovereignty in such contexts is not state-led, but negotiated and contested through asymmetrical struggles over infrastructural access and algorithmic control. This perspective invites a rethinking of sovereignty as something enacted and fragmented across digital and territorial domains, particularly in spaces of ongoing conflict and contested statehood.

Keywords: Algorithmic infrastructure space, resistance, Myanmar

Analyzing Geographic Biases in ChatGPT's Responses

Matthew Zook (University of Kentucky, USA); Graham, Mark and Nunes, Francisco (Oxford Internet Institute, UK)

Abstract. This research project investigates the potential geographic biases present in OpenAI's ChatGPT responses. The great strength of generative AI systems like ChatGPT is its ability to respond to stimuli/questions with interpretation and action, or sense-making action. But these responses are based on the data used to create AI and so the bias and opinions used in training will be reflected back, albeit repackaged in a technological black box. Therefore it is essential to understand the preferences that are "black boxed" within GenAI. To do so this project conducts an algorithmic audit (Benjamin, 2019; Brown et al., 2021; Bucher, 2018; Burrell, 2016; Seaver, 2017) of ChatGPT by systematically scraping and analyzing a large dataset of ChatGPT interactions focused on its geographic preferences. We will identify patterns and preferences in the model's output based on

queries requesting ChatGPT to rank different locations (cities, countries, states/provinces) on a subjective basis (better for entrepreneurs, more accepting of queer lifestyles, etc). The findings of this research will contribute to a better understanding of AI bias and inform strategies for mitigating these biases in future language models.

Keywords: ChatGPT, algorithmic bias, AI, ranking

(SS3a) Special Session 3a – Digital platforms as fixes to urban challenges: promises, pitfalls, and power shifts – Platform Fix

- Contradictions of Governance, Planning and Infrastructure

Chair | Sina Hardaker (Munich University of Applied Science) and Alica Repenning (Universität Greifswald)

Time slot | 9am (Tuesday – November 4)

Room:

How do Digital Platforms and AI Reshape Power Relations in Urban Governance?

Yanliu Lin (Utrecht University, Netherlands)

Abstract. Digital platforms such as social media and planning support tools are playing an increasingly significant role in shaping urban governance and planning processes. Embedded within these platforms, artificial intelligence (AI) is further transforming how power is distributed among governments, private sectors, and citizens. While digital platforms and AI may enhance participation and efficiency in governance, there also raise critical ethical concerns. Notably, there is growing debate over whether AI functions merely as a tool for state or corporate control, or whether it is emerging as an autonomous actor influencing urban decision-making. These developments pose challenges such as justice, privacy, and surveillance. This study explores how digital platforms and AI reshape power relations in urban governance, identifying different patterns and mechanisms through which these technologies influence actor interactions. Drawing on case studies, it illustrates the implications of these shifts and offers insights into approaches for addressing the challenges posed by digital technologies.

Keywords: Digital Platforms, AI, Power Relations, Urban Governance

State-led Reproduction of Data Spatiality: Collaborative Governance and Platform Urbanism

Siyi Liu (University College London, UK)

Abstract. Situating in the Digital China national vision and focusing on ongoing digital government practices, this paper explores the state-centric data governance in the China's Greater Bay Area smart city-region. It highlights the pivotal role of state actors in shaping data governance and addressing structural data silos through two strategies – collaborative governance and institutionalisation of private actors – with platforms serving as the apparatus. Through an analysis of the regional and smart city policies and 46 semi-structured interviews across public, private and academia sectors, the paper not only highlights the transformative potential of state-centric data governance but also broader the understanding of platform urbanism, whether localised platforms explorations with regional cohesion would potentially reproduce the data silos problem. The collaborative governance approaches are integrated into the Government Service and Data

Administration Bureau, introducing a “comb structure” to the fragmented government system and resolving structural data silos through horizontal governance, and the Chief Data Officer mechanism to streamline interdepartmental collaboration while preserving departmental operational autonomy. The State-Owned Enterprises exemplify the state’s strategy in institutionalisation of private actors to empower governments with tech companies’ innovation and technology capability, allowing the state actors to orchestrate the smart city-region development in platformism. While river management and emergency management regional platforms integrate data ecosystems across cities and engage multi-level actors, proliferation of local platforms raises critical questions about platformism: Will these independently developed platforms be integrated, and if so, how will this integration be achieved?

Keywords: Smart City-Regionalism, Digital Governance, Platform Urbanism, Greater Bay Area

Digital urban planning tools and decision-making in Indian cities: How do GIS-Based Master Plans come to be?

Arjama Mukherjee (HafenCity University Hamburg, Germany)

Abstract. Rapid urbanisation in the Global South has led to a growing reliance on digital technologies for urban planning and governance. In India, the shift from traditional Master Plans to GIS-based Master Plans (GMPs) signals not merely a technical upgrade, but a deeper socio-technical and political transformation that demands critical analysis. This paper engages with perspectives from Science and Technology Studies (STS) to build towards a theoretical framework for understanding how GIS-based planning tools are integrated into urban development processes in Indian cities. Drawing on systematic literature reviews across three major themes—the role of GIS-based tools in planning, urban challenges in the Global South, and the digital turn in Indian governance—the paper explores how digital infrastructures are co-produced by technological and human actors. This study aims to conceptualise the socio-technical dynamics that underpin their emergence and operationalisation. It examines how GIS technologies are mobilised, the roles of key stakeholders including planners, government agencies, and technology providers, and the broader challenges and limitations in fostering equitable urban development through digital tools. By establishing this theoretical foundation, the paper contributes to ongoing debates on digital urban governance, smart cities, and the transformation of planning practices in the Global South.

Keywords: Urban planning, digital tools, India, Master Plan, decision making

Assembling the Digital Food Value Chain in Xinjiang: Networked Relations, Labour, and Visibility

Gulinigaer Yishake (City University of Hong Kong, China)

Abstract. In recent years, the rise of digital platforms such as Douyin, Meituan, and Xiaohongshu has profoundly reconfigured the organization of production and consumption in China. As platforms increasingly assemble fragmented sectors of the economy, they create new networked value chains that disrupt traditional labour structures and blur the boundaries between physical and virtual spaces. While platform studies have addressed issues such as algorithmic governance, precarity, and labour control, less attention has been paid to how platforms coordinate heterogeneous actors across sectors within value chains. This study focuses on the evolving digital food value chain, which links actors across different sectors, from farming and packaging to shipping, selling, and consuming. Drawing on Hardt and Negri’s concept of the social factory and Banet-Wiser’s economy of visibility, this study examines how platforms mediate these networked relations and how power, visibility, and value are distributed and contested across different nodes of the chain. Based on

ethnographic fieldwork and interviews conducted in the border region of China, Xinjiang, this research examines how different social actors position themselves within the digital value chain. This study investigates how they negotiate precarious conditions shaped by the paradox of empowerment and surveillance, and how virtual and physical mobilities are entangled in their everyday labour practices. By mapping the spatial and relational dynamics of digital labour, the study offers a nuanced understanding of how platforms mediate socio-economic relations, reproduce inequalities, and generate novel forms of agency and vulnerability within contemporary urban China.

Keywords: Platform economy, value chain, labour, social factory

Imagining Digital Platforms Otherwise: Critical Engagements with a Data-Driven Approach to Flood Risk in Jakarta

Emma Colven and Zara Shabrina (King's College London, UK)

Abstract. Rooted in critical digital geography that highlights the broader political and economic contexts of data-driven approaches, this paper offers a case study of platform intervention drawn from our efforts to bring together different 'ways of knowing' flood risk into a single decision support system (DSS) for North Jakarta. This coastal region is home to some of the city's poorest communities who contend with the pressures of urban redevelopment and tidal flooding. The aim of the DSS is to provide a tool that facilitates flood risk management by enabling the generation of scenarios and related analyses via the integration of social and data sciences. The DSS integrates building-level data generated using AI/ML technologies, flood and land subsidence modeling, and the situated experiences and knowledge of coastal communities, gathered via focus group discussions, interviews, and ethnographic observations. The paper examines three digital/material spaces, and the socio-spatial practices associated with their creation and maintenance: the map, the hackathon, and the platform. We explore the possibilities, challenges, and limitations of our efforts to pursue a data-driven approach that centres marginalised communities. We explore the inherent tensions between the allure of the technological fix offered by digital platforms and the grounded realities of urban governance, instances of epistemological and ontological incommensurability, and the politico-ethical implications of generating data to make flooding 'more governable' in a context characterised by informality. This empirical paper advances scholarship on the role of digital platforms in urban governance by examining how we might actively imagine and do digital platforms 'otherwise'.

Keywords: Flood risk, digital platforms, community, urban governance, inclusion

(SS8) Special Session 8 – Data Voids: Understanding Digital Geographies of the Built Environment through Negativity and Refusal

Chair | Danielle Hynes and Samuel Mutter (Maynooth University)

Time slot | 9am (Tuesday – November 4)

Room:

Towards a Theory of Techno-Negativity: Refusal, Abolition and the Limits of Humanist Techno-Politics

Thomas Dekeyser (University of Southampton, UK)

Abstract. Based on a forthcoming monograph, this paper examines the (im)possibility of abolition in an era of algorithmic saturation. It begins by examining three contemporary modes of

technological politics - techno-reformism, posthumanism and techno-rationalism – marked by a shared insistence on the ontological impossibility of digital disentanglement. Despite this insistence, the paper argues, what binds these divergent strands of thought together is a deep commitment to a humanist politics of technology. As theorists of ontological exclusion have argued, however, humanism has a fatal tendency to ascribe some beings with the luxury of ‘humanity’ while excluding others. To confront the new forms of domination and subjugation this instigates, the paper argues that we need to probe the potential exchange between abolitionist praxis and digital politics. To this end, I propose the conceptual figure of techno-negativity. Abolitionist in thought and praxis, techno-negativity dismantles any axiological commitments to the human as the constitutive ontological scheme of technological politics. The abolitionist does not take technology as a risk that is ought to be managed by the human, but instead, in reverse, starts from the techniques that bring this ‘human’ into being in the first place as a site of violence and domination. Like the powerful movements of police, family and prison abolition it is indebted to, techno-negativity pursues not the refunctionalizing, but the dysfunctionalizing of currently-existing regimes—the dissolution of a technological given.

Keywords: Refusal, abolition, posthumanism, negativity, human-technology relations

Silences in the System: Data Voids, Refusal, and the Politics of the Built Environment in Iran

Shahriar Khonsari (Freelancer Researcher)

Abstract. The framing of the town and the country in Iran is changed rapidly through technology—including personal identification monitoring systems and real estate statistical information—but in the same breath, digital infrastructures are not without problems. The notion of the article is primarily to show that voids in data and refusals are not due to failures of infrastructure but instead are results of contested political geographies. From an urban perspective, the paper explores examples of how the homeless groups, the uprooted inhabitants, and those communities that engage in illegal construction are excluded from the national records, not because of some technical errors in the system but by exclusion and storage of data through both the state and the marginalized communities. By utilizing a platform that integrates gender-focused political geography and critical data analysis, we can understand how the absence of data serves as both a form of resistance and a tool for state governance.

Keywords: Data voids, Refusal, digital governance, Urban Iran, Invisibility

Quantifying gender in energy poverty: A critical review of data, methodologies and contextual constraints

Lin Zhang and Saskia Petrova (University of Manchester, UK)

Abstract. Despite growing attention to gender in energy research, most quantitative studies remain constrained by binary sex categories and overlook relational, identity-based, and intersectional understandings of gender. This study presents a systematic review of quantitative methodologies employed in the study of gendered dimensions of energy poverty, with a particular emphasis on how methodological choices are shaped by data availability, indicator design, and local socio-political contexts. Drawing on global literature published so far, this review systematically identifies key trends in data sources, indicators, and analytical frameworks, highlighting significant regional disparities. The findings demonstrate that common quantitative approaches frequently exclude informal housing arrangements and non-normative gender experiences, reinforcing data gaps that limit policy relevance. Informed by recent debates in feminist political geography and critical data

studies, the paper argues for a justice-oriented rethinking of quantitative methods-one that recognizes data absence, ambiguity, and refusal not as limitations but as sites of critical inquiry. By mapping the methodological landscape and exposing its limitations, this study contributes to ongoing efforts to develop more inclusive, context-sensitive approaches to energy justice and governance.

Keywords: Energy justice, Energy poverty, Gender data, Gender inequality, Intersectionality

“Half the houses built don’t exist”: Questions of absence and refusal in the case of Irish housing, planning and property data

Danielle Hynes and Samuel Mutter (Maynooth University, Ireland)

Abstract. Prominent discourses surrounding the role of data in both planning and housing tend to emphasise the affirmative qualities and processes that data are a part of or enable: from collection, aggregation, linking and sharing, to building, developing, monitoring and enforcing. With widespread digitalisation processes and the growing emphasis on data as providing the ‘evidence-base’ for democratic decision-making around housing and planning, there is often an assumed positive link between data and the phenomena which they represent and afford. From this perspective, the task then is the collection or opening of data about those phenomena and groups which are currently underrepresented and, as a result, deprioritised. However, using case examples from the Data Stories project based in Maynooth, Ireland, the paper examines several ways in which this relatively simple formula is problematised. Looking to the historical (and notably colonial) relationships between data and the politics of land and property (see Benjamin & Raman, 2011), we first examine cases in which the collection and release of data facilitates enclosure, expropriation and extraction. Secondly, we discuss how attempting to grasp the world through data always also means contending with absences of various kinds. We examine this through the examples of evictions, housing vacancy, and perpetual delays associated with non-development and land hoarding. Finally, the paper studies situations wherein forms of data absence and refusal shape the production of existing and possible alternative trajectories. This ranges from housing policies which publish targets purportedly to facilitate democratic transparency and accountability, whilst deleting all record of past metrics, to data and counter-data initiatives which navigate utilising official data sources whilst strategically refusing to engage with the producers of those data.

Keywords: Refusal, absence, housing, planning, data

(SS13) Special Session 13 – Fintech AfterLives: Transformations, Challenges, and the Future of Digital Finance

Chair | Daniela Ferreira (University of Lisbon)

Time slot | 9am (Tuesday – November 4)

Room:

Future Fintech: Using the Walkthrough Method to Understand Non-fungible Tokens (NFT) and its Social Interactions

Ernestina Xinyi Zhu (University of Manchester, UK)

Abstract. With the advancement of technology in cryptocurrency, non-fungible tokens (NFT) have become more and more accessible to users. Any user could register an account in a cryptocurrency wallet and start trading NFT instantly. This research is intended to use the Walkthrough method to understand how users interact with one another on the NFT trading platform. The Walkthrough

method (Light, Burgess and Duguay, 2018) is intrinsically a qualitative method in digital sociology to investigate how users interact with one another on digital platforms. Instead of focusing on the technical infrastructure solely, it emphasises human-machine interactions and how social interactions could play a role in economic behaviours. As for this research, I will go through each interface of OpenSea (the biggest NFT trading platform), including the registration profiles, logging-in process, users' daily usage, and the logging-out process. Each function and symbol will be analysed through the users' perspectives and documented through screenshots and digital diaries. In that case, the affordances of the website and how people make decisions on the NFT trading platform could be observed. As for future research, I argue that it requires more research in customer behaviour studies to follow up and verify the observation of NFT trading platforms.

Keywords: Fintech, Non-fungible tokens, Cryptocurrency, Technology, Business Management

Following the Digital in Children's Everyday Lives: Affective Platform Urbanism and Digital Economy in Shenzhen

Yuxin Gao, Sophie Hadfield-Hill, Peter Kraftl, and Rakib Akhtar (University of Birmingham, UK)

Abstract. Digital platforms increasingly mediate children's everyday lives, shaping their interactions, emotions, and future aspirations (Plowman, 2016). This research conceptualizes that digital finance is not merely an economic tool but an intimate digital technology embedded in children's emotional and social lives. While digital financial tools promise financial inclusion, they also introduce new forms of control, anxiety, and algorithmic governance into children's urban experiences (Mills et al., 2024). This research considers the digital as a 'followable thing' (Liu, 2024) embedded in children's everyday spaces and practices, which attunes us to the contingent, unpredictable, and uncertain routines and processes of framing networks by human and non-human actors. Through analysis of interviews and digital storytelling with 12-14-year-old children in Shenzhen, China, around their embodied experiences of online payment and digital finance technologies, we provide a nuanced understanding of children's situatedness and negotiations around virtual economy in urban and domestic spaces. The work investigates children's behaviour, affection, capabilities, and wellbeing through analysis of children's digital financial 'practice assemblages' (Rathod, 2023). We examine how children experience automation through fintech, negotiate financial authority with parents and digital platforms, and experience the emotional dimensions of financial automation. This research contributes to debates on affective platform urbanism and intimate digital governance.

Keywords: Digital payment, children, affective platform urbanism

Platforms of Promise or Exclusion? FinTech, User Agency, and the Politics of Inclusion

Maida Zafar (University of Lisbon, Portugal)

Abstract. FinTech has emerged as a disruptive force within the platform economy, reshaping access to financial services through digital ecosystems. Positioned as a tool to "bank the unbanked," particularly in the Global South. FinTech platforms offer new avenues for value co-creation between technology providers, users, and financial institutions. Drawing from Amartya Sen's Capability Approach, this paper argues that true financial inclusion must be assessed not merely through access metrics, but by evaluating whether FinTech solutions expand the substantive freedoms and real opportunities of vulnerable populations. FinTech ecosystems, without deliberate safeguards and community-driven designs, risk reinforcing exclusion and inequality. The analysis highlights that FinTech outcomes are not predetermined but shaped through conflicts, negotiations, and feedback

loops between platforms, regulators, investors, and users. Real progress demands systems that prioritize human dignity, equitable value distribution, and empowerment as core metrics of success, not just market reach or technological adoption.

Keywords: FinTech, Platform Economy, Financial Inclusion, Digital Financial Ecosystems, Value Co-creation

(RS4) Regular Session 4 – Digital culture

Chair | Jennifer McGarrigle (University of Lisbon)

Time slot | 9am (Tuesday – November 4)

Room:

(Co-)Creating Spaces for Inclusive Digital Futures in the Screen Industries: Is virtual production the answer?

Nina Willment, Jon Swords, Anna Einarsdottir, Jude Brereton, and Roxanne Bottomley (University of York, UK)

Abstract. The digitalisation of UK's film and TV sector across the 21st century changed how content was made, shared and experienced, with the dominant narrative accompanying the rise of digital filmmaking as one of enhanced efficiency and the democratisation of technology. This paper will critique this dominant narrative, examining how digital transformation within the film and TV industry was not a neutral process, and instead reflected existing, unequal power structures. It will also demonstrate how digitalisation policies and narratives within the UK film and TV sector continue to systematically create exclusionary spaces. After understanding how digital transformation is currently influencing the spaces of film and TV, the paper then asks how can we create spaces for inclusive digital futures within the screen industries. Insights on how we may answer this question come from the introduction of an ongoing co-production research project, which seeks to use the advent of the latest digital technology within film and TV – virtual production (VP) – as a moment of positive disruption for helping to anticipate (and enact) inclusive digital futures. The technology-based changes VP is driving have huge potential to create a more inclusive spaces within the film and television industry. For example, VP needs less location shooting and more facilities are being built outside traditional production centres such as London. The remainder of the paper introduces the methodology of the research project, and how the project is inviting marginalised digital users to be agents of positive change in create newly inclusive spaces within film and TV.

Keywords: Digital film-making, virtual production, screen industries, digital technologies, digital transformation.

The new agorà as a transnational space: the role of the K-pop industry in digital geographies

Maurizio Riccio (University of Lisbon, Portugal)

Abstract. We live in an era in which users and their digital identities have become an integral part of every aspect of life. Digital platforms are no longer simply a means of entertainment, but actual spaces for action. In the context of the relationship between K-pop idols, fans and the agencies that manage the idols, this aspect is more prominent than ever. Platforms such as Instagram, TikTok and

YouTube have become veritable digital agoras where users not only interact with their idols, but also generate collective practices by interacting with logic guided by recommendation and visibility algorithms. These actions influence the behaviour of agencies that shape the public image of idols in order to balance their profits and psychological well-being. These spaces, no longer physical but now digital, become places for discussion and interaction, veritable marketplaces where the boundaries between public and private are constructed and redefined. K-pop, now more than ever, represents a paradigmatic case: an industry that comes to life predominantly online, dependent on the transnational circulation of digital content that uses platforms as essential infrastructure for its global expansion and relative functioning. Using a digital ethnographic approach, the research aims to understand how these spaces mediate between fans, idols and agencies, transforming them and being transformed in turn. K-pop thus becomes a privileged case study, allowing us to observe how online platforms and digital technologies are becoming fundamental to the production of new digital geographies.

Keywords: Kpop, Idol Economy, Digital Geography, Parasocial Relations, Posthuman Idols

Machinima Filmmaking as Resistance: The Politics of Subverting Video Game Boundaries

Zev Powell (University of Melbourne, Australia)

Abstract. The video gaming industry produces ‘serious’ games that promote moral and pedagogical narratives, which contrast from mainstream video games that primarily seek to entertain. The use cases range broadly—from educating young people about slavery and refugeeism, to persuading donors to give to humanitarian causes. There’s an assumption that creative technological solutions offer fixes to social problems, and that video games can do so through play. Through the critical lens of game studies, decolonial studies, and critical geography I problematize this assumption by questioning the gaming industry: To what extent is it a trustworthy purveyor of feeling and action, and to what extent is it perpetuating neoliberalism, and further alienating gamers as commodities? My specific object of interest is a creative intervention that is already challenging the gaming industry through the prism of machinima. Machinima is an emergent digital art form wherein gamers hijack avatars and landscapes, turning them into actors and movie sets. Gamers and artists are remediating game trajectories to reveal political injustices baked into narratives, rules, and geographies. I draw on examples that use Grand Theft Auto V to host subversive discussions of colonialism and police violence; and Battlefield to host a critique of war as a field of play. Putting critical theory into dialogue with machinima, I argue that video game programmers and producers are not positioned to engineer solutions to social problems within their industry and within their game designs, whilst machinima poses new avenues for criticism and resistance.

Keywords: Machinima, Game Studies, Techno-capitalism, Postcolonial, Digital Geography

When satellite images are allies: Journalism's ways of avoiding the lack of public information

Isabella Moura (Universidade Nova de Lisboa (ICNOVA - NOVA FCSH), Portugal)

Abstract. Digitization has naturally meant an increase in the amount of information available, with much of this information appearing in a structured format to facilitate management and the creation of new meaning. Databases are popular in computer-related subjects and have become increasingly common to the general public, as a result of democratic measures to make matters of public interest available, such as documents relating to public administration. Parallel to this popularization of the use and spread of datasets, data journalism emerged as a mediator for this abundance of available

information, and encouraged a profile among journalists based on data analysis and programming. Data analysis has transformed journalism in two significant ways: while it provides independence from traditional information sources by allowing data to directly explain events, it simultaneously requires governments to actively release administrative data. When crucial information remains undisclosed, satellite imagery has emerged as an alternative methodology to visualize and quantify phenomena absent from public databases. This survey shows how the use of satellite imagery proves to be a powerful tool for reporting phenomena. This research used the Sigma Awards database to map the reasons for and uses of satellite imagery in data journalism. A work that seeks to answer «What characterizes journalistic content that uses satellite imagery as a source of information?» and consequently reflect on how methodology based on the use of satellite images tries to respond to the lack of data and unreported issues of public interest.

Keywords: Data journalism, Open Government, Satellite images

11am – Coffee Break

11:30pm – Keynote Lecture 2

12:45pm – Lunch Break (cost-free)

1:45pm – Parallel Paper Sessions

(SS3b) Special Session 3b – Digital platforms as fixes to urban challenges: promises, pitfalls, and power shifts.

Platform Fix - Contradictions of Gender, Empowerment and Participation

Chair | Sina Hardaker (Munich University of Applied Science) and Alica Repenning (Universität Greifswald)

Time slot | 1:45pm (Tuesday – November 4)

Room:

“Always Owing, Never Free”: Chronic Liminality and Digital Debt in Kenya’s Mobile Lending Economy

Marlotte de Jong (University of Michigan, USA)

Abstract. As digital technologies increasingly mediate everyday life across the Global South, their integration into financial systems has reshaped how people access, manage, and experience money. This work examines the entanglements of chronic liminality, cycles of indebtedness, and the proliferation of predatory mobile lending platforms in Kenya, with a focus on digital credit services such as M-Shwari, Fuliza, and M-Pesa. Drawing on ethnographic fieldwork in Kilifi County, this research explores how digital financial infrastructures—often celebrated for their potential to expand financial inclusion—have instead deepened socioeconomic precarity for many low-income users. I conceptualize chronic liminality as a prolonged state of socio-economic suspension in

which individuals are neither fully excluded from nor meaningfully integrated into formal financial systems. Mobile lending apps, with their seamless integration into everyday digital life, normalize debt as a constant condition of survival rather than a temporary remedy. People describe the emotional toll of living in debt cycles shaped by opaque terms, punitive interest rates, and the erosion of informal solidarities through individualized risk profiling. These platforms extend the logic of platform capitalism into the intimate domains of daily life, transforming kinship obligations and local moral economies. By foregrounding the digital geographies of indebtedness, this paper interrogates how infrastructures of mobile finance generate new terrains of vulnerability, extraction, and control. The findings contribute to critical digital geographies by situating mobile credit technologies within broader debates on neoliberal development, financialization, and postcolonial subjectivities. Ultimately, I argue that understanding the geographies of digital debt requires attention to the lived experiences of marginality, temporal entrapment, and the uneven promise of inclusion in the digital age.

Keywords: Digital finance; Indebtedness; Chronic liminality; Mobile lending apps; Platform capitalism; Precarity

Namma Yatri: Uber's key rival, rickshaw driver's promise and women's route to empowerment: Ethnographic reflections from Bangalore's ride-hailing economy. please note that title and abstract are work in progress

Shivani Daxini (Durham University, UK)

Abstract. This paper looks at the promises offered by Namma Yatri, the ride hailing app born in Bangalore in 2022, and reflects on its role as a key competitor to Uber. This paper draws specifically on the experiences of rickshaw drivers, whom this app was originally built for, foregrounding why it was welcomed to the city with open arms by auto drivers due to its promise of 'no commission,' 'no middle men' and a fair solution to the growing anger towards what rickshaw drivers often refer to as 'that man' when referring to Uber. The paper looks specifically at the experiences of female rickshaw drivers in a city and country in which the transport sector is heavily masculinised and where one seldom sees a female rickshaw driver. As Namma Yatri promises to empower and change the lives of women in Bangalore, drawing on Anthropological, Geographical and Developmental perspectives to do so. Based on a year of ethnographic fieldwork in 'The Silicon Valley of India' the paper ultimately demonstrates why certain ride-hailing apps may be viewed as an appropriate fix whilst others a source of contention.

Keywords: Bangalore Uber; Rickshaw; Namma Yatri Women

Digital Safety Tools: An Unmet Promise of Safety?

Pauline Baudens (Tallinn University of Technology, Estonia) and Uttara Purandare (HEC Liège Ecole de gestion, Belgium)

Abstract. As digital urban safety solutions evolve, especially concerning women's safety, essential questions arise regarding accessibility, privacy, surveillance, and the effectiveness of technology-driven strategies. While there is some research on how the three strands of digital technologies, public space, and gender come together, there is a noticeable gap, particularly when it comes to empirical insights from cities in the Global South. This paper seeks to contribute to discussions on women in public spaces in both research and public policies. It investigates the development of digital safety tools, examines the effectiveness of these technologies in supporting mobility and access to public spaces, and explores why city officials are increasingly employing these solutions. To address these questions, a qualitative study was conducted taking the form of interviews with

fifty-four women and seventeen experts among city officials, researchers, and representatives from firms and nonprofits that use technologies ostensibly to improve women's safety. Findings suggest that some safety tools, like sharing information of one's cab ride, are becoming more prevalent and may offer reassurance. However, most tools respond to situations after the fact rather than attempt to prevent violence in public spaces. These interventions tend to be surveillance-based and to generate further surveillance.

Keywords: Safety, digital safety, women's safety, urban safety, gender

Delivering the Cyborg: the technological fixes (and breakdowns) of 'women drivers' in third-party food delivery

Hillary Quarles (University of Colorado Denver, USA)

Abstract. In an era of mounting social, economic, and environmental crises, where social reproduction is confounded by gender wage gaps, platformed gig-work is increasingly viewed as a necessary, even required, strategy to make ends meet. Drawing on a national survey, this empirical research examines how US food delivery drivers navigate platform AI to maximize their earnings. The findings reveal key differences in how women and men approach the food delivery gig, raising critical questions about the entanglement of technology, gender and space in the future of work. While financial burdens are inequitably distributed between male and female respondents, delivery platforms offer women drivers new possibilities in digital space. Like Haraway's (1985) cyborg, women assimilate AI technology to expand their earning potential and transcend the constraints of family schedules and traditional work. These cyborg-drivers do not position themselves as victims of technological domination, but rather as agents leveraging technology to determine their own techno-political futures. However, this cyborgian future is belied by false optimism. The research reveals that the technological 'fixes' that women drivers use to resist AI control and increase earnings function as unintended 'breakdowns', which serve as spatial limits on their deliveries and reduce their income potential. Ironically, delivering the cyborg deepens the digital wage gap, making it even harder for women drivers to pay for housing, food, and childcare. Ultimately in food delivery, AI appears to bolster the status quo rather than amplify the capacity of women drivers to reimagine the future of work.

Keywords: Food delivery, gig work, platform, gender, cyborg

From home sharing to urban inequality: Airbnb in Rio de Janeiro and the socio-demographic debate

Pedro Henrique Cícero Ferreira (University of Lisbon, Portugal)

Abstract. The general discourse of Airbnb tries to associate it to the sharing economy narrative, based on the reintegration of underused assets into markets through digital technology, a perspective that obscures Airbnb's impacts in cities. This platform economy is, actually, producing urban challenges (the intensification of socio-spatial inequality, for example) instead of fixing them. Global urban scholarship has analyzed Airbnb from many theoretical backgrounds, but with limited attention to Latin America, a region characterized by high levels of land informality, housing precarity and uneven urbanization. This article investigates how Airbnb's spatial distribution is associated with socio-demographic determinants through a census analysis of Rio de Janeiro. An Airbnb intensity index was calculated based on the proportion between the platform's guests and residents of Rio de Janeiro's ponderation areas. This index allowed the construction of a map that informs on how the platform is distributed across such territory (in terms of density), which was correlated to different variables (gender, age, race, income, level of instruction, housing type and access). The results show that Airbnb is more dense in areas marked by the presence of women, white residents,

advanced age groups, high income individuals, educated population, apartments typology and rental regime. In general, the study highlights that Airbnb's platform economy in Rio de Janeiro benefits mostly already privileged groups, an evidence that platformization is intersected by multiple concomitant social structures and urban conditions that deepen the various types of already existing inequalities in the city.

Keywords: Airbnb, platform economy, Latin America, short-term rentals, inequality

Digital Borderlands: Technological Transformation and Territorial Politics in Divided Jerusalem

Ronen Eidelman (Ben-Gurion University of the Negev, Israel)

Abstract. Jerusalem's digital transformation offers a nuanced lens for understanding how technology interacts with urban divisions. Our research examines the city's implementation of digital systems and practices for urban governance. It reveals how the city's complex landscape—with its ethnic, religious, and socioeconomic divides, as well as Israeli occupation and partial annexation—serves as an important case study for examining digital geographies in politically contested cities. Digital urban citizenship projects in Jerusalem are neither inherently liberating nor oppressive. In some instances, digital platforms create unprecedented spaces for access to the city's resources and rights and can even facilitate cross-community interaction, while in others they mirror and magnify existing political and social divisions and oppressions. Technology can help overcome bureaucratic obstacles, but can also erect new ones. By mapping municipal digital ventures against residents' digital behaviors, we illustrate how digital infrastructure can deepen existing political boundaries and sometimes perpetuate discrimination through digital services, surveillance, and infrastructure. Our research documents a phenomenon we term 'digital regression,' where smart city initiatives often face limited adoption or reversal to analog alternatives, particularly along Jerusalem's spatial and ethnic divides. Palestinian Arabs and ultra-Orthodox communities experience significant barriers to digital citizenship. Jerusalem exemplifies how digital urbanism becomes entangled with territorial contestation and political control. The city's experience reveals how technological solutions aimed at serving all residents can unintentionally become tools of oppression when confronting entrenched inequalities.

Keywords: Digital bordering, surveillance, Digital inequalities, Smart city, digital regression

(SS4a) Special Session 4a – Immersive Geographies: Rethinking Space, Presence, Identity, Impact and Power in XR, VR and the Metaverse

Chair | Mário Imperioso, Paulo Morgado, and Simone Tulumello (University of Lisbon)

Time slot | 1:45pm (Tuesday – November 4)

Room:

Embodied Inquiry in Metaverse Realms: Rethinking Ethnography for Immersive Virtual Environments

Mário Imperioso and Fiona Eva Bakas (University of Lisbon, Portugal)

Abstract. This conceptual research explores how immersive environments such as the metaverse contribute to a reshaping of spatial, methodological, and ethical foundations of ethnographic research. As young users increasingly inhabit virtual spaces, forming communities or 'tribes', the

need to critically engage with these contexts in-situ grows. Focusing on Roblox as a case study, we examine how traditional ethnographic approaches can be adapted to investigate identity, presence, and community within digitally mediated environments where interaction is performed through avatars. This contribution reflects on how spatial mobilities and digital embodiment affect the research process, particularly in terms of participant access, knowledge co-production, and fluid identity expression. Methodological innovations developed for this research, include the creation of a custom Roblox research experience and the integration of external platforms such as Discord and Reddit to facilitate dialogue and observation. Visual and multimedia strategies—such as screenshots and ePortfolios—are employed to document participant interactions and maintain a reflective research diary. Key epistemological and ethical issues are addressed, including the challenge of studying avatars as performative proxies of the self, which can disrupt embodied relationality in fieldwork. Concerns related to informed consent, privacy, and data security in immersive platforms are critically analysed, especially in relation to the risk of cybercrime. Ultimately, the research proposes a flexible methodological framework for conducting ethnography in immersive geographies. It aims to contribute to the ongoing development of critical digital methodologies by contextualising how presence, space, and power operate in the metaverse.

Keywords: Roblox, digital ethnography, human geography, innovative methods

Mapping resistance: spatial imagination between Paolo Volponi and the Minecraft Library

Giulia Carrapa and Mário Imperioso (University of Lisbon, Portugal)

Abstract. This paper explores the intersection of critical imagination, spatial resistance, and collaborative creativity by connecting the literary dystopias of Paolo Volponi with the digital architecture of the Minecraft Library. Volponi's narratives, particularly *Il pianeta irritabile*, depict disoriented post-apocalyptic landscapes where language, politics, and ethics collapse under the weight of technocratic alienation. Similarly, the Minecraft Library emerges as a counter-hegemonic space, where users recreate censored knowledge and experiment with collective storytelling within immersive, decentralized environments. Through a cross-methodological approach - blending literary analysis with digital exploration in immersive worlds - the paper examines how both domains engage the political potential of imagination to challenge dominant narratives. Volponi's grotesque, philosophical characters inhabit worlds fractured by ecological and moral collapse, echoing contemporary concerns mirrored in Minecraft's community-built environments. By examining these overlapping imaginaries, the study foregrounds how spatial poetics operate as a critical lens for ethical reflection and resistance. Both literature and digital platforms are shown to cultivate new forms of agency and world-making by empowering readers and users to reconfigure the spaces they inhabit-real or imagined. The contribution underscores the enduring relevance of imaginative geographies in fostering awareness, solidarity, and critical intervention in a time of environmental uncertainty and social fragmentation.

Keywords: Digital creativity, Literary geography, Minecraft, Volponi, Imagination

Framelessness and Spatial Anchoring: Understanding the aesthetic and micro-logical principles behind Apple's Spatial Computing paradigm

Max Kanderske and Tristan Thielmann (University of Siegen, Germany)

Abstract. The future is frameless. At least, if we are to believe the "Spatial Computing paradigm" promoted by Apple's VisionPro smart glasses. Under this aesthetic regime, apps and interface elements are no longer confined to a rectangular desktop surface - they can be arranged on an

“infinite canvas” that promises to “seamlessly blend digital content with the physical world”. While the ideal of seamlessness had already been a staple within Mark Weiser’s vision for Ubiquitous Computing, it is only with contemporary XR technology, that the increasingly unbounded collection of geodata (Andrejevic 2018) is met with matching interface aesthetics of framelessness. With his concept of immutable mobiles, Bruno Latour directs analytical attention toward the ways in which media act to stabilize certain forms of spatial information while rendering others fluid. Applying this thought to the AVP, we ask how the glasses arrange digital objects in space without recurring to the organizing principle of the frame. The context sensitivity of spatial computing becomes apparent in the device’s ability to datafy its geophysical surroundings, integrating them into Apple’s ecosystem in the process (Blackman/Harley 2024). The AVP recognizes the position of walls, furniture, and other people, and situates digital content accordingly. At the same time, digital elements can be anchored within the physical environment, even as the user’s body remains in motion. In this respect, spatial computing can be conceptualized as an epistemic mode of singularized immutable mobilization.

Keywords: Spatial computing, immutable mobiles, framelessness, augmented reality, immersion

Virtually left behind: inhabiting declining online worlds

Luca Allegranza Quicke (University of Southampton, UK)

Abstract. This paper examines the idea of “success” within the example of virtual space, focusing on immersive, multiuser online environments - from social spaces of the early 2000s, to more recent iterations of the metaverse. These platforms and spaces aim not only to construct a spatiality, but a world-as-resource, where presence and immersion become extractable pools of value. However, defining ‘success’ is a relative question, wherein the creator and user approach the framing, generating misalignments in expectations and experiences. In most cases, when a virtual space is recognised as a commercial failure, it is taken offline. Some linger longer, plateauing into periods of decline, abandoned or overlooked by those who built these spaces, but still populated by small enclaves of users. In these neglected spaces, the primary question for remaining users becomes: what does it mean to still inhabit a world left behind? This research engages with debates on “left-behind” communities, the co-constitutive nature of space, and the commodification of digital spatiality. Despite virtual space having drifted in and out of the zeitgeist, pushes towards spatialising the internet are enduringly potent, especially set against the context of an industry which looks towards AI design tools and systems. The growing potential for mismatched geographical imaginations and differing understandings of what makes a space worth being in continues to grow in significance. Examining these overlooked spaces reveals how spaces become bound with meaning, what these meanings are for the groups that co-constitute them, and ultimately how their polarity limits the possibilities of immersive spaces.

Keywords: Immersive space, geographical imaginations, technological failure

(Un)leashed Metaverses: On the Material Limits of Synthetic Space

Fabio Iapaolo and Paolo Bory (Milan's Polytechnic University, Italy)

Abstract. The metaverse is often described as a space of frictionless immersion and spatial transcendence. In reality, however, it is grounded in a complex interplay of infrastructures, devices, and interfaces, generating a multiplicity of actual and imagined environments and diverse ways of dwelling within them. This paper explores how the promises of metaverses, as socio-technical formations, are continually negotiated, and frequently curtailed, by persistent material constraints and the realities of embodied experience. Unlike artificial intelligence, where discourse often centres on algorithms and abstract computation, engagement with metaverses—across their many interpretations and trajectories—is inseparable from questions of materiality. Processing power, latency, energy consumption, battery duration, and device ergonomics do not merely influence

performance; they determine what kinds of virtual environments can be built and inhabited. These constraints also register at the level of the body. Users interact with synthetic environments via sensorimotor systems attuned to movement and orientation in a world governed by physical laws. Motion sickness, fatigue, and disorientation reveal persistent misalignments between digital mediation and embodied perception. At the same time, prevailing design imaginaries often posit a normative user—sighted, mobile, and spatially unobstructed—thereby embedding exclusion into the interaction model itself. Drawing on digital geography, science and technology studies, and media studies, this paper foregrounds the interplay of hardware, space, and embodiment in shaping what the metaverse is—and what it might become. Rather than treating material limitations as temporary obstacles to be engineered away, it argues that they are foundational to the spatial, sensory, and social imaginaries through which synthetic environments take form.

Keywords: Metaverses, Materiality, Embodiment, Digital spatiality

(SS10) Special Session 10 – Hyperscale Geographies

Chair | Ulysses Pascal, David Bassens, and Cheng Fang (Vrije Universiteit Brussel)

Time slot | 1:45pm (Tuesday – November 4)

Room:

Hyperscaler Infrastructure and Digital Exclusion: Sovereignty and Dependence in Latin America

Danielle Marques (Brasilia University, Brazil)

Abstract. Hyperscalers are reshaping the global digital economy, establishing themselves as essential infrastructures for artificial intelligence and data-driven services. However, this dependence generates dynamics of digital exclusion and compromised sovereignty, especially in Latin America. This paper investigates how hyperscaler infrastructure influences the region's technological development, reinforcing inequalities between those who control the infrastructure and those who depend on it. The concentration of data centers and services in a few territories impacts the ability of Latin American states to define their own digital policies. The lack of technological sovereignty translates into economic and strategic vulnerabilities, where decisions about cloud infrastructure and data processing are determined by global actors with little consideration for local needs. This also intensifies internal digital inequalities, as peripheral communities have limited access to digital services due to reliance on external infrastructure. Drawing on Bratton's "stack" perspective, this study argues that hyperscaler architecture extends colonial dependency relations into cyberspace, replicating patterns of economic exploitation and unequally distributing the benefits of the digital economy. By analyzing these dynamics, this paper aims to contribute to the debate on regulation, sovereign alternatives, and the future of digital inclusion in Latin America.

Keywords: Hyperscalers, Digital Exclusion, Technological Sovereignty, Cloud Infrastructure, Artificial Intelligence, Data Colonialism, Geopolitics of Technology, Economic Dependence, digital Inequality, regulation and Governance, global South, digital Economy

Scaling in the Cloud: The Disruption of 'Cloudification' in Connected and Autonomous Vehicles

Sam Hind (University of Manchester, UK), Alex Gekker, Gabriel Pereira, Fernando van der Vlist (University of Amsterdam, Netherlands)

Abstract. This paper examines the case of Connected and Autonomous Vehicles (CAVs) – cars integrating various digital, sensor-dependent components – to explore how ‘cloudification’ enables the industrialization of AI. Through analysis of CAV patent documentation, we provide evidence of the increasing cloudification of the automotive sector. Firstly, we map the broader ecosystem of industry players, key innovations and leading hubs of technological development. Secondly, we conduct a more granular analysis of the cloud business strategies employed by major CAV firms, examining how they envision cloud-based innovations. Preliminarily, we identify four patterns: (1) the significant role of Big Tech hardware firms (e.g. Intel, Nvidia) in leveraging large-scale cloud infrastructures; (2) the growing involvement of Chinese tech firms (e.g. Baidu, Pony.ai, TuSimple, Nio) amid geopolitical tensions surrounding the automotive sector; (3) the strategic shift of legacy automakers (e.g. Toyota, Nissan) pivoting towards cloud-based mobility solutions; and (4) the bubbling undercurrent of AI and CAV start-ups (e.g. SafeAI, Motional, Bedestrian). Across these analytical levels, we make sense of the imaginaries and strategies of cloudification in CAV technology and innovation discourse, posited by firms as a desirable, necessary, and unassailable model for everything from vehicle communication to machine vision. Yet as we contend, CAV manufacturers’ increasing dependence on Big Tech cloud infrastructures has deepened sectoral vulnerabilities and supply-chain dependencies at a time when new modes of technological sovereignty and protectionism are being asserted through trade tariffs, export bans and ‘onshoring’ techniques. As firms grapple with these novel developments, the disruptive potential of cloudification grows ever larger.

Keywords: Cloud computing, AI, connected and autonomous vehicles, imaginaries, technological sovereignty

Building Frontiers: Data Centre, Dormitory, and BTOs

Yee Win Neo (King’s College London, UK)

Abstract. What has a hyperscaler data centre, foreign workers’ dormitory, and a build-to-order (BTO) residence has to do with each other? I was inspired to answer this question when I saw these three facilities side by side in northern Singapore, with just a single road in between each of them. Data centres, dormitories, and BTOs house data, migrant workers, and citizens respectively. In resource-scarce Singapore, land is a precious and expensive commodity, nearly wholly controlled by the state. I argue that the grouping of these three at the edge of Singapore is not through coincidence, but through a careful weighing of data, migrant workers, and citizens to the state. I focus on two characteristics in this instance: 1) the siting of the data centre between the migrant workers’ dormitories and the BTO flat, with the humming of the compressors much more audible on the side of the dormitories; 2) the relative invisibility of the data centre and the migrant workers’ dormitories, such as on online maps apps like Google Maps and Open Street Map. Drawing upon ongoing ethnographic fieldwork around data centres for my doctoral dissertation, I argue that a relational approach (Massey, 1999) helps us understand how data, labour, and citizens are subjected to varying degrees of ‘periphelisation’.

Keywords: Data centre, dormitory, BTO, frontier, relational

Striving for Sovereignty across the Cloud Finance Stack: A Relational Comparison of the United States, the European Union, and China

Ulysses Pascal, David Bassens, and Cheng Fang (Vrije Universiteit Brussel, Belgium)

Abstract. Platform finance implies financial institutions’ growing dependence on the infrastructure and technologies of large tech firms. This reliance manifests itself most clearly in cloud services provision where American technological hegemony has triggered concerns about technological

sovereignty in the European Union. In China, American Big Techs have not gained much of a foothold given the role of domestic Techfins in a wider attempt to install algorithmic governance. The observed interdependencies and segmentations of global digital technology networks warrant a further analysis of how cloud finance becomes enmeshed in wider geopolitical power struggles. Based on official document analysis, this paper studies the geopolitical dimensions of cloud finance regulation in the EU, the US, and China. Given the fragmented nature of cloud regulation, it compiles insights from data protection, market competition, financial sector regulation, and cybersecurity to understand how cloud finance is governed in each macro-block. Our analysis shows how regulation in the three blocs supports US financial cloud hegemony, whilst producing financial cloud subordination of its geopolitical ally the EU and drawing China into financial cloud insulation.

Keywords: Cloud services provision, global digital technology networks, infrastructural geopolitics

(RS5) Regular Session 5 – Doing digital geographies

Chair | Jorge Rocha (University of Lisbon)

Time slot | 1:45pm (Tuesday – November 4)

Room:

Student Teachers as Multipliers in the Implementation of Reflexive Map Competence: A Critical Approach to Digital Sovereignty in Geography Education

Luis Rüther (University of Münster, Germany)

Abstract. The digital turn in cartography has made map production accessible to all user groups via Web 2.0 technologies, turning users into “prosumers” and enabling new forms of participation. However, this also facilitates the uncritical dissemination of selective perspectives and interests. Developing the ability to critically interpret and use digital maps is therefore essential to digital sovereignty (Glasze, 2009) and must be established as a core competence in geography education (Brügge mann & Frederking, 2024). This contribution addresses the implementation of reflexive map competence as an innovative and critical teaching concept. In Germany, structural limitations—especially in geography taught as a minor subject—pose challenges for curricular innovation. One approach to overcoming this is through the involvement of student teachers as multipliers. While other subject-specific pedagogies have highlighted the lack of qualified multipliers (Lipowsky & Rzejak, 2018), geography education must also investigate the broader question of how this role can become attractive and effective across institutional settings. The presented approach builds on the cascade model of teacher training (Prediger et al., 2017) and integrates principles such as case-based learning, modeling, resource orientation, and reflective practice (Borko et al., 2014; Gonzales et al., 2016; Koellner et al., 2011; Rösken-Winter et al., 2018). A qualitative study accompanies the program, capturing the perspectives of both student teachers and in-service teachers on the efficacy and perceived value of the initiative. Initial results highlight both potentials and tensions in scaling innovative, critical digital practices through multiplier strategies.

Keywords: Teacher professionalization, multipliers, transfer, innovation, reflexive map competence

Moving Qualitative Data Collection Forward with QualNotes: Collaboration and Digitisation

Danielle Drozdowski (Stockholm University, Sweden)

Abstract. Mobile technology can transform how we do qualitative research and collect data. The development of QualNotes was driven by a desire to enhance the collection, collaboration, and coordination of qualitative data using a device most researchers, educators, students, and planners already carry—their smartphone. The QualNotes App maps, captures, records, edits, and annotates field-based research, and integrates it digitally. QualNotes started from the premise that digital devices are already part of how we as researchers and our students, learn and practice qualitative methods. Informing its conceptual development, then, has been ‘more-or-less’ digital geographies (Merrill et al, 2020), and Pink et al’s (2017: 379) contention that ‘our ways of engaging with [the digital] are multisensory, and [they] accompan[y] us through the everyday world’. Moreover, GIS technologies pushed into the digital, ‘generating spatial visualizations’ and opportunities for field-based emplaced mobile mapping exercises. Notwithstanding the availability of in-place digital mapping, there remains a deeply rooted preference for classroom-led instruction about place-based mapping. In this paper, I not only discuss this innovative digital technology, but I also track through the narrative of its development and experimentation to show how I encountered different languages of technology, contexts and concept bases. Central to the pedagogic process has been a desire to shift towards students learning in place and with the digital tool already (always) in their hands, by incorporating digital technologies to synthesise the experiential (cf. Kolb 2014) and emplacement into qualitative data collection.

Keywords: Qualitative Data Collection, Mobile App, Digital Methods, Innovative Technology, Collaborative Ethnography

The digital geographies of tact

Mike Duggan (King’s College London, UK)

Abstract. This paper outlines a research agenda for the spatialities of tact produced by, through and of digital spaces. As a discipline interested in what and who characterises digital space, and in how different relations come to produce space, the article puts forward a proposition for geographers to take tact seriously as an inherently spatial concept useful for theorising the production of space in our digital society. The paper identifies three strands of tact from the literature, 1) tact and social behaviour, 2) tact and touch, 3) tact and judgement, and outlines what they can offer geography in terms of a novel framework for studying digital society. It raises questions of how and why digital spaces and practices produce new trajectories for displays of tact in everyday life, how digital spaces modulate our understanding and experiences of touch, as well as asking whether algorithmic decision making technologies such as Artificial Intelligence have a capacity for tact, and what that means for the geographies these systems shape. The work makes a contribution to the discipline’s long standing interests in spatial tactics and socio-spatial behaviour, in touch and sensory geographies, and more recently to algorithmic decision making.

Keywords: Tact, Judgement, Space, Digital media, Artificial intelligence

Participatory digital methodologies for urban food systems: the case of FirstLife in the Metropolitan Turin Food Atlas

Tommaso Tonet, Sonia Migliore, Sara Filippelli, and Chiara Sonzogni (University of Turin, Italy)

Abstract. This contribution presents an action-research project developed within the Metropolitan Turin Food Atlas, an interdisciplinary initiative involving geographers, designers, sociologists, computer scientists, agronomists, and political scientists. In response to the growing complexity of urban food systems, the project adopts innovative digital methodologies — participatory platforms, qualitative GIS, and Volunteered Geographic Information (VGI) — to make food systems more visible and support public policies. Central to this process is FirstLife, a participatory platform created by the multidisciplinary research group ‘Territories and digital communities’ of the Department of

Informatics, which combines social networking features with interactive mapping. It enables administrations, organizations, and citizens to collaboratively collect and represent spatial information about the food system. Through a bottom-up approach, FirstLife has mapped urban gardens, sustainable school canteens, food waste recovery projects, educational and social initiatives around food. This dynamic and collaborative archive aims not only to gather scientific and non-scientific knowledge but also to foster dialogue among stakeholders and civil society, offering new tools for the governance of complex urban food networks. The presentation reflects on methodological challenges, achievements, and future developments in using participatory digital platforms for socio-environmental research.

Keywords: FirstLife, urban food policies, Turin Food Atlas, participatory digital platform, Volunteered Geographic Information

Modelling Spatial Sustainability for the management of sustainable human behavior

Julia Forster and Stefan Bindreiter (TU Wien, Austria)

Abstract. Spatial sustainability requires informed and robust decisions about our built environment. Holistic modeling of spatial environments for predictive, data-driven planning and decision support towards spatial sustainability intersects multiple disciplines. Decision-makers are challenged to integrate these disciplines in the best possible way and to address the various influences that shape human behavior in urban and rural regions. Typically, sustainability assessments occur late in planning or post-completion. This paper proposes a new method using system dynamics models to analyze impacts and interactions across multiple scales at an early state of planning, making changes easier to implement and requiring fewer resources in terms of time and money. The approach models spatial sustainability in four intertwined pillars: environmental, economic, social, and gestalt sustainability. These pillars are based on characteristics, capturing interrelations and interactions in causal loops backed by data. The Python-based proof-of-concept tool digitally embeds this model for iterative development. This planning and decision support tool enables local authorities to predict and set sustainability targets. It also allows testing project ideas against these frameworks, helping developers align detailed projects with sustainable goals. Through data-driven simulation of development scenarios, the tool raises awareness of sustainable options and supports radical shifts in all sectors of sustainable inward development (settlement, transport, energy supply etc.). This promotes transparency and traceability of planning decisions for new sustainable spatial strategies.

Keywords: Collaborative Planning, Decision Support Tool, Sustainability Assessment

(RS6) Regular Session 6 – Mobile people, mobile spaces

Chair | Jorge Malheiros (University of Lisbon)

Time slot | 1:45pm (Tuesday – November 4)

Room:

Modelling Differential Space: Transfer Learning and the Digital Geographies of Transport

Adham Enaya (University College London, UK)

Abstract. This paper explores the use of machine learning as a methodological and epistemological bridge for transferring urban and spatial models across diverse geographic contexts. By engaging with Henri's Lefebvre's concept of differential space —space as produced through contradictions, multiplicities, and lived practices (Lefebvre, 1991) — the study interrogates how algorithmic models, often trained in data-rich Euro-American cities, can be adapted to better reflect the socio-spatial complexities of underrepresented urban environments. Focusing on the transport system of Amman, Jordan, we examine the transfer of predatory urban models from UK cities and Bogota, Colombia to explore how transportation policies and infrastructures shape land use distribution and travel behaviour. To operationalize this investigation, we developed TranSim, a machine learning framework designed to evaluate the feasibility and implications of model adaptation across contexts. This case study surfaces the asymmetries in data availability, policy logic, and spatial assumptions embedded in digital urban knowledge production. It critically examines the vertical transmission of computational models from global centres of digital capital to cities like Amman, while also highlighting horizontal flows of insight—such as those from Bogotá—that offer more context-sensitive and socially grounded alternatives. In doing so, the work positions transfer learning not merely as technical tool, but as a vector of digital epistemology—shaping what kinds of urban future are imagined, modelled, and legitimized. It calls for a critical pedagogical approach to digital geography, one that foregrounds transparency, reflexivity, and socio-spatial theory in the training and deployment of urban models.

Keywords: Transfer Learning, Differential Space, Urban Modelling, Knowledge Transfer

Everyday digital rhythms in Stockholm public transit

Björn Nordvall (Stockholm University, Sweden)

Abstract. Digital devices characterize and define our experiences everyday life, especially in/on public transit. In Stockholm's public transit system, the personal smartphone is a tool to pay for and display tickets, to entertain, to maintain communications, to locate oneself—it is multifunctional and ubiquitous. These personal devices exist alongside non-personal digital tools that provide travel information: when the next train will arrive, what connections are possible at the next bus stop, and where the ferry is in the archipelago on a GPS-enabled map on a wall-mounted LED screen. While similar across different forms of transport, the use of both personal and non-personal digital systems differ across spatial contexts. Each context informs the rhythms of how digital devices are used, just as the social situations that travel occur alongside do too. Drawing on empirical material collected from participant observation, vox pop interviews, and semi-structured interviews with travelers on the Stockholm public transit system, I examine how different spatial contexts of the metro, bus, and archipelago passenger ferries change along with the uses of personal digital devices. I also discuss how the same research participants understand the non-personal digital systems that structure their experience of transit systems, and how these different devices are seen as being related to each other.

Keywords: Digital technology, everyday life, public transit, rhythm

Lockers and platform-mediated luggage storage in Barcelona: spatial analysis of luggage services in a touristified city

Sofía Mendoza de Miguel and David García Álvarez (Universidad Complutense de Madrid, Spain)

Abstract. In recent years, the expansion of short-term rentals has been accompanied by the rise of various businesses related to tourists' luggage. These initiatives mainly fall into two categories: automated self-service storage facilities—commonly known as lockers—and local businesses that

provide luggage storage through intermediary platforms. This research examines how these two types of storage points (lockers and local businesses) are distributed across Barcelona, identifying the factors that may explain their locations and their contribution to the city's touristification. To this end, we first performed a Kernel density analysis to evaluate their spatial distribution. Next, we classified the platform-mediated businesses offering luggage storage according to their main commercial activity in order to identify which sectors benefit most from this supplementary service. Finally, two OLS models were developed to determine the variables that influence the spatial pattern of each storage type. The findings indicate a clear concentration of storage points in Barcelona's city center and a strong relationship between the presence of short-term rentals and luggage storage services.

Keywords: Platform economy, lockers, touristification, luggage storage

Zooming in on the local shadow behind the algorithm: The role of physical stations in China's food delivery platforms

Shenyuan Zhang, Niels Beerepoot, and Dominic Teodorescu (University of Amsterdam, Netherlands)

Abstract. Research on platform labour largely examines the structuring of "digital cages" managing workers through algorithms. Few studies narrow their focus to the local level to scrutinize workplace management systems. Drawing on the Local Labour Control Regime (LLCR) framework, this paper explores the localized management system dominated by the smallest regulatory units: stations of food delivery platform in China. Based on empirical data collected in Guangzhou, including interviews with station supervisors, recruitment agents, and riders, our findings reveal that stations play three key roles: ensuring workforce supply stability, optimizing local delivery efficiency, and intensifying management discipline. In addition to enforcing the virtual control mechanisms established by digital platforms, stations engage in daily surveillance and spatial and time control to address local glitches in the platform's system while enhancing delivery efficiency. Beyond direct control, station supervisors implement indirect strategies to shape a "new workplace culture". These strategies, embedded within the broader interrelations between stations, local institutions, and workers, aim to expand the internal labour market while ensuring workforce retention. Furthermore, by categorizing riders into three groups—newcomers, regular riders, and professionals—station supervisors employ differentiated management tactics that not only fragment workers' union power but also maintain competitive station performance. Overall, this paper contributes to the study of platform control by shifting the research focus to the local level, unpacking station-based control mechanisms, and examining their interactions with local institutions. It suggests that while virtual control remains a dominant focus in platform studies, localized control mechanisms within workplaces should receive greater attention.

Keywords: Food delivery platform, Local Labour Control Regime, Physical stations, Workplace control, China

3:45pm – Coffee Break

4:15pm – Parallel Paper Sessions

(SS3c) Special Session 3c – Digital platforms as fixes to urban challenges: promises, pitfalls, and power shifts.

Platform Fix - Contradictions of Sustainability, Health and Green AI

Chair | Sina Hardaker (Munich University of Applied Science) and Alica Repenning (Universität Greifswald)

Time slot | 4:15pm (Tuesday – November 4)

Room:

Tracing the Impacts of Climate Health Platforms on Regional Adaptation Policies

Razieh Rezabeigisani and Sören Becker (Philipps-Universität Marburg, Germany)

Abstract. Digital climate health platforms, ranging from early warning systems (EWSs) to remote patient monitoring (RPM), have emerged as new public policy tools in the intersection between public health, climate adaptation, and smart city strategies. While digital platforms introduce new data dashboards and communication channels, they face challenges related to interdisciplinarity, stakeholder integration, and end-user engagement. Furthermore, the extent to which these platforms are integrated into the upstream regional climate change adaptation policies remains underexplored. The main question of this research is how digital climate health platforms interact with regional climate adaptation policies, influencing governance structures, decision-making, and policy-making processes. To answer this question, we employ a mixed-methods approach including policy analysis and semi-structured interviews with stakeholders from selected case studies in the Netherlands and Canada to trace the linkages between digital health platforms and the policy frameworks governing climate adaptation. Our study also explores the role of key stakeholders, including platform providers, government agencies, private actors, and transnational organizations, in shaping regulatory digital climate health landscapes and mitigation norms. Furthermore, we consider the role of platformization on equity and accessibility, exploring whether digital interventions facilitate or exacerbate socio-spatial inequalities in climate health governance. Finally, this study calls for a more integrated approach that aligns digital health interventions with holistic, participatory, and sustainable climate-health adaptation policy solutions.

Keywords: Digital platforms, climate health, adaptation policies, urban governance, platformization, policy integration

Digital Solutionism in “Food Deserts”: Can Technology Fix Food Apartheid?

Pascale Joassart-Marcelli, Fernando J. Bosco, and Keavy Mcfadden (San Diego State University, USA)

Abstract. Although widely used in policy circles, the concept of food desert has been criticized for failing to acknowledge the root causes of community food insecurity and inspiring superficial solutions that ignore local contexts and socio-spatial processes underlying uneven food access. Digital technologies have been recently deployed by private, public, and nonprofit actors to increase access to affordable and healthy food in underserved neighborhoods, especially in cities where the digital increasingly shapes urban life and food cultures. For instance, smartphone applications and platforms are being used to reduce food waste, facilitate the delivery of groceries, support urban farming by monitoring, optimizing, and automating production in small spaces, provide nutritional

advice to people on limited budgets, and connect residents and local organizations to crowdsourced resources. These technological solutions are often presented as apolitical, pragmatic, and efficient. Yet, we know very little about the adoption and impact of such technologies amongst people living in so-called food deserts. In this project, we examine digital applications (e.g., Too Good to Go, Rhubarb, Fresh Food Connect, Nourish) that claim to offer solutions to the “problem of food deserts.” We rely on assemblage theory and use the concept of technological fix to explore how these digital solutions seek to “eradicate food deserts” by incentivizing behavioral change (e.g., sharing, recycling, and growing food) without engaging participants in a larger social and political movement that collectively questions and challenges food apartheid. Our paper engages with literature on food justice, platform urbanism, digital foodscapes, and social movements.

Keywords: Foodscape, platform urbanism, food desert, food justice, digital solutionism

A Bibliometric Review of Twin Transition (TT) Research: Current Challenges and Future Directions

Han Chu and Robert Hassink (Kiel University, Germany)

Abstract. The convergence of Industry 4.0, Artificial Intelligence (AI), platformisation and decarbonization strategies is presenting both opportunities and challenges across various industries. In response to these profound transformations, Twin Transition (TT) has emerged as an interdisciplinary research topic that has gained significant attention in sustainability studies (Burinskiene & Nalivaika, 2024; Fouquet & Hippe, 2022), industrial economics (Myshko et al., 2024; Ortega-Gras et al., 2021), and public policy and management research (Gerlitz & Meyer, 2021; Timmermans et al., 2023). Firms, governments, and regions must adapt to these transformations while ensuring technological inclusivity, environmental responsibility, and economic resilience, highlighting the urgency for comprehensive academic analysis. Recently, economic geography and regional studies have also shown increasing interest in TT (Cattani et al., 2023; Cicerone et al., 2023; Faggian et al., 2024; Fazio et al., 2024), reflecting its growing significance in spatial and regional development debates. TT gained greater prominence when it was formally introduced as part of the European Green Deal in EU policy documents (Kovacac et al., 2024), which further accelerated scholarly and policy-oriented discourse on the topic. TT can manifest across multiple scales: firm level (Burinskiene & Nalivaika, 2024; Montresor & Vezzani, 2023; Rahnema et al., 2022), industry level (e.g., agriculture) (Myshko et al., 2024) or regional level (Fazio et al., 2024; Gerlitz & Meyer, 2021; Hervas-Oliver & Capone, 2024), demonstrating its wide-ranging applicability and complexity across different spatial and organizational contexts. This paper provides a systematic bibliometric review of the existing TT literature, identifies major research streams and challenges especially from economic geography and regional studies perspective, and proposes future research directions by integrating insights from interpath dynamics and co-evolutionary frameworks.

Keywords: Twin Transition; Green Transition; Digital Transition; Co-evolution; Inter-path

(SS4b) Special Session 4b – Immersive Geographies: Rethinking Space, Presence, Identity, Impact and Power in XR, VR and the Metaverse

Chair | Mário Imperioso, Paulo Morgado, and Simone Tulumello (University of Lisbon)

Time slot | 4:15pm (Tuesday – November 4)

Room:

Public Acceptance of Smart Eco - City Environments: A Human-Centered Urbanism Perspective on The Line, Neom

Aneta Robak (University of Wroclaw, Poland)

Abstract. The rise of smart eco-cities introduces innovative urban solutions, yet the digitalization of urban environments transforms spatial experiences, influencing perceptions of attachment and belonging. As hybrid spaces emerge—where physical and digital geographies intersect—understanding how individuals cognitively and emotionally engage with these landscapes is crucial. This study examines public perceptions of The Line, Neom as a case study of digitally mediated urbanism. By analyzing acceptance and sentiment rates toward its key urban features—vertical living, walkable design, and high-speed transit—this research explores how immersive urban imaginaries shape spatial attachment and digital-physical interactions. Findings from 72 surveys conducted at the Neom Zero Gravity Urbanism exhibition in Venice (September 2024) reveal varied acceptance levels. While walkability is widely embraced, high-speed rail elicits neutral responses, reflecting uncertainty about feasibility. Vertical living, however, remains the most polarizing, highlighting tensions in public adaptation to hyper-dense urbanism. These responses underscore how futuristic urban visions generate both fascination and skepticism, shaped by familiarity and accessibility to digital infrastructures. By framing The Line within broader debates on digital and hybrid geographies, this research aligns with discussions on how immersive urbanism influences presence, agency, and socio-spatial hierarchies. Insights from this study underscore the importance of addressing social sustainability and public engagement towards futuristic smart - eco city projects. Future research will further investigate the psychological dimensions of place attachment in the design phase of technologically mediated urban environments, contributing to a deeper understanding of human experiences within emerging metaworlds.

Keywords: Smart - eco cities, digital urbanism, spacial perception, urban imaginaries, place attachment

Envisioning “Green cities” in the Metaverse: raising children’s awareness of sustainable mobility through gamified virtual design

Xin Su (University of Lisbon, Portugal)

Abstract. This study is a conceptual exploration of how immersive virtual environments can be used to build children's awareness of sustainable mobility and climate-friendly behaviours at an early age. I propose to integrate gamified urban design concepts into a meta-universe platform to create a participatory educational approach that enables children to interactively conceptualise and experience a ‘virtual green city’ - a city where slow transport (e.g. walking and cycling) and public transport (e.g. electric buses) are the main modes of travel, and where shared spaces and ecological care are integrated. To support this concept, we are grounded in interdisciplinary theories of digital geography, socio-technical transitions, sustainable urban mobility and urban health; at the same time, this vision is also shaped by our long-standing observations and shared resonance with the structural neglect and vulnerability of children in both physical and digital spaces. For us, this is not only an academic endeavour, but also an ethical commitment: to create more inclusive and belonging environments for children through the design of safer and more empathetic spaces both physical and virtual. This project aims to contribute to earlier environmental awareness education, stimulate emotional awareness, and provide a more inclusive and emotionally deep narrative pathway for a sustainable global transition.

Keywords: Metaverse, Children in Virtual Environments, Gamified Learning, Inclusive Virtual Design, Socio-Technical Transitions, Sustainable Mobility.

Mediating urban spaces through virtual reality (VR) - comparison of 360-degree video and interactive virtual environment place experiences

Tomasz Sowada and Maciej Główczyński (Adam Mickiewicz University, Poland)

Abstract. Extended reality technologies offer new possibilities for interaction with urban spaces, transforming their perception and the ways they are consumed. Perception and consumption of urban spaces can increasingly be induced through virtual reality (VR) environments rather than solely through physical structures. Consequently, a shift occurs between experiences derived from direct, lived interactions with the physical environment and those resulting from engagements with digital representations constructed through VR. This shift raises profound questions about the nature of urban experience and the production and consumption of space in contemporary cities. They are related to altering the perception of urban environments through VR technologies, the influence of VR technologies on human behaviour and consumption of digital content, and the redefinition of the traditional notion of space and place by the presence of VR. This presentation discusses comparative research based on 30 VR qualitative interviews divided into two groups: one using 360-degree video and another using the VR environment - EarthQuest application. The study compares different modes of place experience through VR technologies and explores how place understanding changes regarding its mediation through these technologies. Findings indicate significant differences between the two groups, with 360-degree videos providing sensory engagement and emotional connection, yet with tendencies toward lack of control over the experience. EarthQuest interactive environment enabled more contextual interactions by allowing users to dynamically explore virtual representations of urban environments. This research advances digital placemaking discourse, contributing to methodological development within digital geography and offering new insights into the human-place-technology relationship.

Keywords: VR, 360-degree video, EarthQuest, urban space

Reclaiming Identity through Immersion: The Metaverse as a Tool for Civic Reconnection in Peripheral Urban Areas

Daniela La Foresta and Ilaria Bruner (Università degli Studi di Napoli Federico II, Italy)

Abstract. In peripheral urban contexts marked by institutional mistrust and socio-spatial marginalization, immersive technologies offer new avenues for civic engagement and identity reconstruction. This contribution intends to explore how virtual environments—particularly within the metaverse—can support participatory spatial practices aimed at reactivating local narratives and fostering a renewed sense of place-based belonging. Drawing on a pilot project conducted in San Giovanni a Teduccio (Naples), we examine how community-driven co-design of Metaverse spaces can become a vehicle for civic expression, emotional reattachment to place, and increased awareness of urban transformation. By combining spatial storytelling, visual immersion, and local knowledge, the project aligns with theories of immersive presence (Lombard & Ditton, 1997), and demonstrates the potential of immersive media to deepen participants' sense of embodiment and emotional engagement (Chowdhury & Hanegraaf, 2022; Mokas et al., 2021). These immersive dynamics, integrated within a participatory framework (Foth, 2017; Steen, 2013), also challenge top-down planning models, fostering inclusive civic dialogue and co-responsibility. Moreover, the use of the Metaverse as a platform for civic interaction addresses broader concerns about spatial justice and digital inclusion (OECD, 2020; Fegert, 2023). Preliminary findings suggest that the immersive setting not only enhances perception and understanding of territorial change, but also empowers residents—especially in historically marginalized districts—to act as co-producers of urban meaning, bridging the gap between citizens and institutions."

Keywords: Metaverse, Local Identity, Immersive Narration, Civic Engagement

(SS12) Special Session 12 – Geospatial artificial intelligence (GeoAI) in urban planning

Chair | Michał Rzeszewski (Adam Mickiewicz University), Phil Jones (University of Birmingham), Maciej Głowczyński (Adam Mickiewicz University), Tess Osborne (University of Leicester), Stef De Sabbata (3), and Adam Wronkowski (Adam Mickiewicz University)

Time slot | 4:15pm (Tuesday – November 4)

Room:

Using natural language processing to interpret community feedback on planning applications

Beatrice Taylor, Adham Enaya, and Adam Dennett (University College London, UK)

Abstract. In the UK planning applications are required to be submitted to ensure that changes to the built environment align with local, and national, plans. Following regulation 18 of the Town and Country Planning act the community is then encouraged to provide feedback. This feedback informs the decision-making process of the local planning authority, influencing whether an application is approved or denied. Here we present an AI model ‘comment_mill’ which streamlines the processing of public comments (representations), and creates data driven analyses. From the eight London councils who publish their representations, we collated a dataset of n=29,750 comments pertaining to planning applications filed since 2021 (n=5,850 – of which n=2,419 had at least one representation). Natural language processing utilised google-bert/bert-base-uncased, a pre-trained English language model. The model was fine-tuned for domain specific knowledge, and utilised for downstream tasks of topic modelling, sentiment analysis, and summarisation. We also developed a user interface to allow interested parties to visualise the model outputs. As the UK government increasingly looks to the prop-tech sector to outsource AI analysis of planning applications, our tool provides a completely open-source solution. ‘comment-mill’ achieves promising accuracy identifying the topics, and sentiments, of community feedback. In addition to supporting planning officers, we believe this tool could foster collective intelligence by empowering the community to collaboratively assess the potential benefit, or detriment, of proposed applications to their area. The ongoing collection and classification of comments will present future opportunities for a better understanding of the geographies of dissent and support.

Keywords: Natural language processing, smart cities, urban planning, artificial intelligence, planning support system

AI-based imaginaries and representations of youths' urban spaces

Adam Wronkowski, Maciej Głowczyński, Sara Bręcz-Kupiec, Michał Rzeszewski (Adam Mickiewicz University, Poland)

Abstract. Public spaces are vital for youths’ activities, yet their perspectives are often marginalized in research and everyday practice. This paper analyses how youths, through interactions (prompting) with generative AI (GAI), engage in designing urban spaces and how these are represented in GAI-constructed narratives. We conducted an experiment with 30 participants aged 15–19, who, through a creative and iterative process, designed imaginary spaces reflecting their needs and identities, as well as modified existing ones. Using the multimodal model ChatGPT, participants generated and refined textual and visual urban space representations. Our aim was to explore whether GAI usage alters youths' perceptions of urban spaces and their own needs. Importantly, GAI is treated not just

as a tool but as a co-creator, influencing the design process through "dialogue" with youths. We critically examine how GAI reproduces, enhances, or distorts dominant narratives about youth-oriented urban spaces. Through this lens, the study provides broader insights into the future role of GAI in participatory urban design processes. The findings reveal specific youths' visions of urban spaces co-created with GAI, raising important questions about both the agency of GAI and the empowerment of youths in shaping urban environments. Ultimately, the study encourages youth engagement in discussions about meaningful spaces and challenges predominant urban design narratives, aiming to strengthen their voice and right to the city through creative collaboration with GAI.

Keywords: Generative artificial intelligence, youths, urban space, urban design, agency

Imagining Places through the AI Gaze: Exploring Human-AI Interaction in Generative Image Creation

Maciej Głównyński, Michał Rzeszewski (Adam Mickiewicz University, Poland), Phil Jones (University of Birmingham, UK), Tess Osborne (University of Leicester, UK)

Abstract. The proliferation of Generative AI (GAI) has made it easier to create images from text-based prompts, with results varying in quality, style, and accuracy based on the model, operator, and biases in training data. One application of GAI lays in generating images of real-world places. No unlike Urry's (2002) "tourist gaze," the abundance of those images can shape how we perceive places, leading to an "AI gaze" and potentially reinforcing AI biases. We hypothesize that GAI-generated images may lean toward generic depictions, missing unique characteristics of a place, though human operators guide this process with their own goals in mind. This raises questions about the agency of both humans and AI in shaping images. This study explores how people use GAI to generate graphical representations of places, focusing on how operators/creators perceive and rate these images, how they align them with their own mental images of a location, and whether GAI use alters this perception. We conducted an experiment with 40 participants, who created images of both known and unknown locations using GAI, followed by interviews. Images of hometowns were often viewed critically as inaccurate, despite detailed prompts and iterative refinement. Conversely, depictions of unknown places elicited positive, albeit generic, reactions characterized by surprise and acceptance. Familiar but not visited places were represented in a generic, pop-cultural style. The process highlighted distinct human-AI interactions: while operators perceived substantial AI autonomy and struggled to effectively guide image outputs through prompt engineering, the exercise itself was regarded as creatively stimulating and revealing.

Keywords: Generative AI, place, AI gaze, agency

(RS7) Regular Session 7 – Gender perspectives on digital geographies

Chair | Margarida Queirós (University of Lisbon)

Time slot | 4:15pm (Tuesday – November 4)

Room:

Feminist digital geographies in flight: Everyday drone stories

Anna Jackman (University of Reading, UK)

Abstract. Drones are a growing feature in skies beyond battlefields, mobilised in increasingly wide-ranging civil, commercial and recreational roles. Drawing on UK-based fieldwork with diverse stakeholders and participants, this paper reflects on drones both as they hover, glide and touch down in everyday life, and are poised and anticipated to do so. Approaching drones at the intersection of feminist digital geographies and feminist geopolitics, it interrogates everyday droning and the increasingly diverse actors (state, non-state, citizens) mobilising and encountering drones. In so doing, it reflects both on how drones are variously reimagined, the vocabularies mobilised in accounts of everyday droning, and where digital geographies may contribute to extending these.

Keywords: Feminist digital geographies, Drones, Everyday droning, feminist geopolitics, aeromobility

Mapping trans safe spaces: Data production, counter-mapping, and new spatial orientations for LGBTQ+ people in Brazil

Helton Levy (London Metropolitan University, UK)

Abstract. Mapping trans safe spaces: Data production, counter-mapping, and new spatial orientations for LGBTQ+ people in Brazil. Latin America has been known as one of the deadliest regions for trans people. The region has also seen some of the most innovative scenes of counter-mapping to include indigenous populations, based on their culture or environmental purposes (Oslender, 2021). This paper explores recent developments in counter-mapping and gender in the region, focusing on the case of Antra, Brazil's National Association for Transvestites and Transexuals. Antra has produced influential annual reports re-situating the country's statistics about violence suffered by trans people, particularly with regards to assassinations. Conceptualising new maps based on the mundane violence suffered by trans people (Bork-Hüffer et al., 2023), their initiatives reveal new dimensions of trans geographies (Browne, Nash & Hines, 2010) towards an embodied sense of accountability and resistance (Lopes Heimer et al, 2024). This research investigates this link between generating data on gendered violence and potential spatial orientations with an eye to its intersectional potential (Todd, 2021). This case sets the example for how counter-mapping initiatives that consider gendered bodies, subjectivities, and experiences in the modern city can also fructify into practical takeaways and influence the public discourse. The research also imagines proposals on how to use emerging technologies to connect the new data on violence with new forms of presentation.

Keywords: Digital geography, trans, LGBTQIA+, Brazil, counter-mapping

Conceptualising migrant women's urban encounters mediated by digital platforms

Sanna Rautio (University of Southampton, UK)

Abstract. This conceptual paper will explore the gap in the literature around migrant women's experiences of belonging (specifically, in Finland), and will explore the potential of urban belonging mediated by digital platforms for social support networking. It will also set out how research may address these issues. Migrant women often occupy socially vulnerable positions and struggle to integrate into Finnish society. Diversity-blind essential digital services that many migrant women utilise every day produce and reinforce inequalities in Finland's increasingly digitalised society (Buchert et al., 2023). However, while acknowledging this, there is also the potential to go beyond dystopian orientations, a focus towards digital urban interfaces that seek to (re)build "other possibilities of doing, knowing and relating" (Elwood, 2020, p.217). Against this background, I will consider the potentials of digital platforms that migrant women have either developed themselves or used to seek new connections, friendships, and support in Helsinki both online and offline. The

focus is on exploring possibilities of belonging that arise in digitally mediated urban encounters where the intersections of race, gender, class, and inequality are played out in migrant women's everyday urban lives. This doctoral project seeks to look in more detail at the many material and bodily relations, and structural processes that shape migrant women's knowings and doings in digitally mediated urban encounters which can enable particular kinds of relations that can reimagine, challenge and transform everyday urban life. Here, the aim is to focus on how experiences of belonging arise or are disrupted by human and digital relations.

Keywords: Digital platforms, migration, gender, belonging, urban encounters

(RS8) Regular Session 8 – Digital geographies of labour

Chair | Simón Sánchez-Moral (Complutense University of Madrid)

Time slot | 4:15pm (Tuesday – November 4)

Room:

The Territorialization of Digital Platforms: A Study of Delivery Platform Workers in Brazil

Igor Dalla Vecchia (Martin Luther University Halle-Wittenberg (MLU), Germany)

Abstract. This paper examines the dynamics of territorialization, deterritorialization, and reterritorialization associated with digital labor platforms in Brazil, focusing on the on-demand goods transportation sector. Situated in the Gig Economy context, the research explores how these platforms reconfigure urban space and work practices, creating new spatial references for workers and redefining how conflicts manifest in cities. Grounded in the perspective of the Production of Space, based on works by Henri Lefebvre and authors like Rogério Haesbaert, the study analyzes how digital platforms transform delivery workers' spatial practices by employing various forms of territorial control and spatial appropriation that coexist and overlap with pre-Gig Economy models. Methodologically, the investigation includes a literature review on the Production of Space and digital labor platforms, providing a conceptual foundation for analyzing urban transformations driven by these companies. Observations of interactions within a WhatsApp group of platform workers in Rio de Janeiro enabled identifying specific urban dynamics tied to this activity. Interviews with worker leaders and platform workers complement the analysis, deepening the understanding of spatial practices and influencing the development of the "Meu Corre" application. This innovative digital tool, created collaboratively with workers, supports financial awareness by aggregating data on income and expenses. Additionally, collaborative digital mapping conducted with workers identified strategic urban points such as accessible bathrooms and areas with high delivery demand. Analysis of SMS data revealed how platforms spatially reorganize workers through real-time operations by stimuli for better pay offers.

Keywords: Territorialization, Digital Platforms, Gig Economy, Spatial Practices, Urban Space

Deglobalization of the global digital labour marketplace: the end of the frictionless global labour market

Niels Beerepoot (University of Amsterdam, Netherlands)

Abstract. Digital platforms for gig work are coming of age with some platforms being operational for nearly 20 years already. During their years of operation, some platforms have gradually become

more institutionally embedded, more (self)regulated, and have adopted a more profound intermediary role in managing the labour that is traded via their platform. In many ways the platform economy matures and the novelty of the “platform revolution” is beginning to wear off. At the same time, platform companies face various challenges to their business model. They are confronted with a new macro-financial reality, must cope with investors’ demands to become profitable, and face increasing regulatory pressures. This new constellation presents a number of challenges and opportunities that require platforms to rethink their strategies in order to thrive or survive. To understand how platforms deal with these challenges, this paper looks at the transformation over time of the largest global platform for online freelance work: Upwork. It examines how the platform is increasingly subject to geopolitical, regulatory, technological and market pressures that affect its global delivery model. This paper discusses the challenges to transform its global delivery model into a profitable business and how the platform may rather deglobalize and only serve the most profitable and accessible markets. Herewith this paper questions the market power and reach of digital labour platforms and broader claims of a frictionless planetary labour market where everyone would be able to compete for work.

Keywords: Digital Labour platforms, online freelance labour, gig economy, (de)globalization, planetary labour market

Challenging the Developmental Potential of Online Freelance Platforms: Filipino Freelancers’ Agency in a Transforming Platform Ecosystem

Jorien Oprins (University of Amsterdam, Netherlands)

Abstract. Online freelance labour platforms such as Upwork and Freelancer initially transformed labour markets by functioning as truly global and largely unregulated marketplaces governed by supply and demand. These platforms attracted freelancers worldwide, including from the Global South, where they were viewed as a tool for economic development. However, as they have matured, their focus has shifted from value creation—facilitating the exchange of digital services—to value extraction, capitalising on their digital infrastructure to maximise financial returns. Consequently, many have adopted a more interventionist approach, increasingly managing and controlling their labour pools. This study examines how the growing intermediary role of online freelance platforms affects employment opportunities for freelancers in the Global South and how they exercise their agency in response. Focusing on Upwork, we analyse historical platform data to trace its increasing control over labour dynamics. Additionally, we draw on longitudinal qualitative research with 25 Filipino freelancers, whose work trajectories were tracked over a two-year period. The Philippines offers a compelling case, as its government actively promotes remote gig work as a development strategy. Findings reveal that Upwork’s greater control has introduced stricter barriers to entry for financially disadvantaged freelancers. In response, these workers navigate a broader digital ecosystem—leveraging platforms like Facebook and LinkedIn—to secure remote gig opportunities beyond conventional freelance platforms. These insights challenge assumptions about the inclusivity and developmental potential of online freelance platforms. They also raise questions about the developmental implications of freelancers’ increasing reliance on more informal digital spaces to access remote work.

Keywords: Gig economy, Gig work, Online freelance platforms, Global South, Economic development

Mapping and Understanding Geographic Polarisation in Labour Market Digitalisation

Balázs Cserpes (HafenCity Universität Hamburg, Germany)

Abstract. Digitalisation is a comprehensive trend reshaping the labour market, affecting nearly all occupations but with considerable variation in scale and scope. Key aspects include automation potential, exposure to artificial intelligence, teleworkability, required digital skills, and links to platform-based gig economies. In recent years, various indicators have been developed to quantify these components (Dingel & Neiman, 2020; Felten et al., 2021; Frey & Osborne, 2017; Lennon et al., 2023), enabling their integration with national and local labour market statistics to capture sectoral and geographic variation. These mappings reveal marked regional disparities, with recent studies (Cserpes, 2024; Pizzinelli et al., 2023; Schendstok & Wertz, 2024; Yang & Kim, 2024) identifying geographic variation in these trends. Digitalisation tends to manifest differently depending on structural characteristics such as urbanity, demographic composition, and education and income levels (Gmyrek et al., 2023; Kochhar, 2023; Nurski & Ruer, 2024). While the concrete outcomes of digitalisation are difficult to predict, these spatial differences may contribute to increasing polarisation. However, to fully understand the spatial dynamics of digitalisation, it is essential to go beyond static mapping and explore how regions interact. This presentation proposes a relational approach to understanding digitalisation in the labour market. It examines how labour markets with contrasting digitalisation profiles—such as urban centres with high AI exposure and adjacent rural areas with low automation potential—co-exist and influence one another. By linking quantitative indicators with spatial proximity and structural labour market features, the analysis discusses the interdependencies and tensions that shape the geography of digital transformation.

Keywords: Labour market, digitalisation, polarisation, digital work

Digital platforms and intermediaries in the Portuguese law and their role in the precariousness of crowdwork offline workers

Patrícia Santos (University of Lisbon, Portugal)

Abstract. This study is relevant because, in 2016, the European Commission only identified three actors in the digital platform economy: service providers (or people performing platform work), users and intermediaries (or digital platforms). But, before the European Directive (EU) 2024/2831, on improving working conditions in platform work was approved, distinguishing the digital platform from the intermediary; in 2018, the Portuguese Law No. 45/2018 (Uber Law), specifically for Uber transportation sector, had already created a fourth actor – “TVDE operator” or intermediary. The aim of this paper is to talk about crowdwork offline digital platforms and intermediaries, lacks and obligations of Portuguese law and their role in the precariousness of crowdwork offline workers. Work that is based on bibliographic analysis (e.g. labour law) and statistical data, part of our research as a PhD student, entitled “Crowdwork offline at a crossroads: work, employment and inequalities”. About lacks and obligations of Portuguese law, when analysing and comparing Law No. 45/2018 and the Article No. 12-A of the Portuguese Labour Code (mainly directed to riders), and despite having different obligations, we believe to have emptied the role of the Portuguese intermediary. Which is in line with what was stated in legal doctrine, e.g. Leal Amado and Moreira (2019), Monteiro Fernandes (2022; 2023), Palma Ramalho (2022) and Moreira (2023). In Portugal, only the intermediary in transportation sector has obligations, so we believe that, not only, riders are in a more precarious situation, but that might be a significant number of workers in an undeclared work situation.

Keywords: Crowdwork offline, Digital Platforms, Intermediary, Person performing platform work, Uber Law and Portuguese Labour Code

6pm – Roundtable and Closing Conference

