

THE SYNTHETIC CITY CONFERENCE

Exploring the impact of AI and digital media on urban living

6-7 September 2023

Dublin City University, Glasnevin Campus, Dublin 9, D09 V209, Ireland

<https://syntheticcity2023.com>

Organising committee:

Lou Therese Brandner, Marcos Dias, Diogo Pereira Henriques, Scott Rodgers

First day, Wednesday, 6 September 2023

08:30 – 09:10 **Arrival and Registration** *Solas Room, KA202*

09:10 – 09:30 Welcome and Introduction *Solas Room, KA202*
Conference welcome from **Marcos Dias**,
followed by thematic introduction from **Scott Rodgers**

9:30 – 10:30 Opening Keynote: **Aphra Kerr** *Solas Room, KA202*
Chair: **Marcos Dias**

Finding Common Ground in Real Synthetic Cities

Abstract

Our cities are increasingly mediated through seen and unseen digital technologies, infrastructures and artificial intelligence technologies that promise pre-emptive control of myriad forms of production, consumption and governance. From taxis to coffee shops, from paying bills to banking, from bus journeys to catching Pokemon, we are all to varying degrees participants in emerging synthetic cities. Paradoxically, the more citizens and inhabitants are digitally engaged in contemporary cities, the greater the potential for new forms of marginalisation and disempowerment. Drawing upon theories and concepts from political economy of the media, critical data studies, game studies and urban sociology this presentation asks how can we intervene to use digital technologies for empowerment and agency and can a focus on creativity, participation and ethics go beyond the tokenistic and the short term? Can digital media themselves provide this common ground, and if so, which ones and under what conditions? Illustrated with examples of completed and ongoing empirical and practice based projects conducted primarily in Dublin, this talk asks is it possible to create a common ground between those who live and work in a city in contexts where those who are most impacted by datafication and surveillance have the least input into the design and governance of those systems. It also explores the challenges and potentials raised when global capital and transnational technologies interface with real places and politics.

10:30 – 11:00 Coffee & Tea *Solas Room, KA202*

11:00 – 13:00 **Practice-based Contributions**

11:00 – 11:40 Data Cities and Digital Twins *Solas Room, KA202*
Chair: **Marcos Dias**

Data City Dublin: Grounding Data Through Hybrid Media and Physicalisation | **Oliver Dawkins**

Abstract

Data City Dublin is a large-scale 3D printed model of central Dublin from the Dublin Docks to the east to Phoenix Park in the West. Data representing both real-time urban dynamics and more long-term patterns and trends animate the model through projection mapping. In this way the model provides a multi-scaler spatio-temporal overview of the city. The model was first created for inclusion in an exhibition for the Building City Dashboards project which never occurred due to the global Coronavirus pandemic. The exhibit is now being used by the Data Stories project at Maynooth University as one of a range of creative and art-based methods (Kitchin, 2022) to explore stories both with and about property and planning data in Dublin. In this way the project seeks to ground issues related to the housing crisis in Dublin by referencing them to the context provided by a physical representation of the city and enhancing communication and engagement through multimodal visualisation and sound (Huron, 2023). The exhibit will continue to evolve throughout the course of the Data Stories project.

References

- Huron, S., Nagel, T., Oehlberg, L., & Willett, W. (Eds.). (2023). *Making with Data: Physical Design and Craft in a Data-Driven World*. CRC Press.
- Kitchin, R. (2022). 'Arts based methods for researching digital life'. In Ash, J., Kitchin, R. and Leszczynski, A. (forthcoming) *Researching Digital Life: Theory, Methods and Application*. Sage, London.

Smart DCU Digital Twin: Advancing Towards an Immersive Environment | **Jaime B. Fernandez**, Mani Dhingra, Kevin McGuinness, Kieran Mahon, Jamie Cudden, Muhammad Intizar Ali, Michael Meenan, Wayne Rutherford

Abstract

This is a groundbreaking collaboration that brings together Bentley Systems, Dublin City Council, Dublin City University, and the INSIGHT SFI Research Centre for Data Analytics with a goal of exploring and understanding the concept of Digital Twin Technology for better user experience. By leveraging their combined capabilities and expertise, the collaboration aims to push the boundaries of Digital Twins to new heights. The focus is on exploring the power of Artificial Intelligence (AI) and Immersive Technologies to visualise complex environmental and contextual data in real time using advanced 3D visualisation techniques. This technology is experimented in a 3D cyberspace of Dublin City University, which is also one of the testbeds under the broader Smart Dublin umbrella. It is an ongoing project and expects to develop effective use-cases for monitoring present situations, multi-stakeholder collaboration and action research towards a responsive and adaptive campus environment. The methodology is mainly based on the Bentley ecosystem, which is used for the processing of the drone photography, creation of the digital models, streaming and storing of IoT sensor data, and publication of the Digital twin. Our work would like to demonstrate the use case of Smart DCU to the wider audience using immersive technology and interactive web-based platforms. For instance, people would be able to experience the whole campus environment with existing IoT data, 360 degree views etc as well as explore the interiors of some of the buildings for which BIM models are in place. For this, we will need a dedicated space with a large projector screen for people to experience part of our ongoing digital twin project using VR headsets. The idea is to showcase the current work to the general public and possibly receive some valuable feedback.

11:40 – 12:20 Algorithms and Images
Chair: **Lou Brandner**

Solas Room, KA202

Dystopian Algorithms and the Urban Imaginaire | **Mitch Goodwin**

Abstract

Slow Down Time is an international collaboration between writers, academics and artists working with the generative text-to-image service Midjourney. A series of thirty-three conceptual interactions that traverse geography, time and physical space. * Large Language Models (LLM) permit an interpretive and an exploratory interaction within the parameters of a shared vocabulary – not just of linguistics but also the collective memory of visual culture and its lived environments. However, the outcomes of these interactions can often be messy and confused, imbued with the unexpected and the uncanny. Even in error though, there seems to be some sort of logic at work. There is a propensity – like in the generative text tool, ChatGPT – to organise and to please which can lead to embellishment and hallucination. This was especially evident during the development of the Slow Down Time archive, in which the arbitrary synthesis of spatial environments – coded atmospherics and dimensions not necessarily requested by the text prompt – began to appear in the images. Might these virtual settings be locations in which algorithms can dream and hallucinate and be free? Is it a sampled memory of human deeds past, or a warning from a calculated future predicated on humanity's demise? Scenes of ravaged urban spaces twisted architectural forms and eerie cinematic landscapes are prevalent in these images. The past and the future of the city coalesce here in this synthetic dreamland – this unsolicited world making. By bringing together key works from the Slow Down Time project that deal directly with urban space and those that have had environments imposed upon them by the AI, I hope to examine how AI generated images construct dystopian urban tropes in the process of staging scenic environments within – or in the framing of – its algorithmic compositions.

* Once the images for each series were generated a small series of editions was curated from the resulting archive (which often numbered in the hundreds). I posted hard copies to the participants (along with their original prompts) for the authors to respond to in the form of a short lyrical return.

Failure to Load | El Putnam

Abstract

Increasingly urban spaces are designed to be Instagrammable – stylized in a way to facilitate capture through video and still image, then shared on social media with hashtags in order to go viral, in turn driving more visitors to the site (online and away from keyboard). The stylization of such spaces to translate most effectively through lens-based media imbues a new means of experience that is tied to its capacity for digital capture and sharing online as a synthetic city. I propose the art work *Failure to Load* as an intervention into such Instagrammable places. If these places are designed to be captured, tagged, and shared online, cultivating a digital presence that turns such these into digital objects (Hui 2016) that can be tracked, stored and sorted through algorithmic mediation, then *Failure to Load* presents a glitching of such sites. In this project, I visit various Irish urban spaces designed to be Instagrammable, but intervene in such processes through the development of image based works (still image and short videos) that counter intended engagement. Drawing from the visual language and styles of social media image production, I am producing images and videos that are abstracted through noise and glitch, rendering these locations indiscernible. The purpose of this project is to defamiliarise the optimisation of urban spaces for social media capture as an intervention of experience. *Failure to Load* is a work-in-progress and will be presented through an Instagram account that requires a tablet or iPad for people to interact with at the conference.

References

Hui, Yuk. 2016. *On the Existence of Digital Objects*. Minneapolis, MN: University of Minnesota Press.

12:20 – 13:00 Sonic Materiality and Sponge Cities

Solas Room, KA202

Chair: **Scott Rodgers**

Ciúnas: antiphonal to ambisonic. An exploration of sonic materiality through composed virtual environments | **Declan Tuite**

Abstract

Ciúnas (Irish for stillness & silence) is based around place, texture and resonance. The piece explores spatial composition, recording and mixing and is presented via 360 video with Ambisonic audio via headsets. Four choral pieces composed specifically for this project, which were recorded as single voices in the studio, with spatial arrangement in mind, offer the basis of structure and narrative cohesion. The studio recorded voices source is played back into sites chosen for their acoustics properties and textures and thematic significance. The source is then re-recorded on site via Ambisonic and stereo pair mics. For example, Cá mixes recordings from a mine, a wood and cave, while Ciúnas brings together a cathedral, a government building and a jail. Through rearranging the source playback and combining various Ambisonic recordings impossible (improbable/synthetic) spatial arrangements and textural combinations are achieved which fill the virtual space. The piece is realised via 360 video format which allows for an intentional ceding to the visitor/audience of the final mix and point of focus while engaging with the piece. The piece draws attention to the sonic materiality of the city spaces in contrast/counterpoint to organic spaces. The piece plays with the drives and motives of withdrawal and reconnection from the synthetic city through the use of human voice which is organic, familiar and immediate, experienced in virtual composited spaces. The piece can be experienced as a transportation to a specific location which combines sounds and visual sources from different directions in a single place, or as a composition of an impossible space that merges and blends sonic and visual elements from several sources into a fabricated, constructed mise en scène.

Smart Sponge Cities, Silicon Archipelagos and the Digital Silk Road | **Helena Wee**

Abstract

SinaBai's sponge cities were a response to urban flooding that had caused many deaths due to unchecked urbanisation and climate change. Pilot cities had permeable wetlands, roads and pavements becoming temporary islands. SinaBai incorporated solar glass, intelligent learning machines, and other technologies into smart sponge cities. Clean technologies required rare earths and polysilicon. Indigenous nomads were moved from rural homelands to cities to mine minerals for conglomerates. There they were watched by face stealers. Their data trained intelligent surveillance systems for smart sponge cities, marketed as stopping crime before it starts. Dissidents protested the use of forced labour in the solar, wind and surveillance supply chains. But SinaBai denied this, remaining resolute. Technologies derived from learned machines could help with many problems; environmental, social or political, adding a layer of efficiency to smart sponge city management. Solar and wind powered undersea data centres were used to store and process the mass of new information coming from smart sponge cities. SinaBai wanted to sell its Smart Sponge City concept to the world to increase its profits and influence. They would form a silicon archipelago of data nodes spanning oceans and networks not yet touched by INWE's influence. Connected by undersea transmitter lines they formed a digital silk road. Their first undersea transmitter line was called Peace exemplifying their good intentions. Using Peace distant smart sponge cities could have ultra-fast connectivity. But INWE was afraid SinaBai would read their data packets and refused to use Peace. They suspected SinaBai of data espionage.

13:00 – 14:00

Lunch

Solas Room, KA202

Including YECREA Networking Session from 13:20
with **Diogo Pereira Henriques**

14:00 – 15:00 Time to visit practice-based installations

*Media Studio
& Room C165*

Note: Participants will be able to visit practice-based installations throughout the conference.

15:00 – 15:30 Coffee & Tea

Solas Room, KA202

15:30 – 17:10 Parallel Paper Session 1

Session 1a Infrastructure, Environment and Materiality
Chair: **Diogo Pereira Henriques**

Chuilín Room, KA113

Infrastructures of the Future: Vehicle-to-Everything Technologies and The Predictive Turn | **John Cheney-Lippold**

Abstract

V2X (vehicle-to-everything) technology envisions a frictionless utopia for transportation: vehicles communicate with each other to coordinate movement and decrease pollution; traffic lights calculate pedestrians' and vehicles' trajectories in order to determine when to turn green; bicyclists broadcast their location, direction, and velocity 10x a second so cars will not run into them. As an ideal transportation infrastructure, V2X is a network that coordinates the motley individuality of our roadways. This high-tech, prototyped infrastructure emphasizes a future of algorithmically-mediated worlds and the importance of prediction in our daily lives. While still in development and awaiting large-scale proof of function, V2X introduces several issues that deserve theoretical investigation. In this paper, I will address some of these issues as defined by two impossibilities, one ironic and the other metaphysical. The ironic impossibility is that of feminist, socialist epistemology. V2X requires a construction of the world according to many different perspectives. Following Donna Haraway's scientific morality, "only partial perspectives promises objective vision," V2X accepts the limits of singular, masculinist definitions of the world in favor of social mode of knowledge production. The metaphysical impossibility is that of predicting the future. As an infrastructure that coordinates objects at variable speeds and directions, V2X is reliant on prediction of moving objects. It is an infrastructure of the future that introduces its own politics, temporalities, and prefiguring ontologies. Put together, these two impossibilities build a socialist future that seizes the modes of temporal production. By taking seriously how smart cities and algorithmic technologies are embedding these seemingly impossible claims to the world (analysts have assigned the V2X market as holding \$1.4 trillion by 2030), we can better perceive how technologies of smart cities do not simply digitize the world but fundamentally rewrite how that world is understood, and thus where we can live within it.

A Signalled Infrastructure: (Dis)Connections in the City | **Iain Emsley**

Abstract

Increasingly connected devices and things create new relationships between humans and devices that invite questions about infrastructuring, or the process through which these links come into being and are maintained. This paper presents preliminary results of the Unheard City project that engages with devices using the Bluetooth Low Energy (BLE) protocol with an Android phone. The application draws from data ethnography with sensors. My contribution uses the methods to explore infrastructure and its infrastructuring. I introduce the app supported data walk before using the results of app supported data walks to reflect on the socio-technical infrastructures that are detected on the Bluetooth signals and the technological literacies required to engage with them. Initial results suggest forms of infrastructure that can be read as patterns of (dis)connection. Firstly, there is a hardware infrastructure made up of physical systems, such as lights and routers. The second, a software-defined infrastructure is defined by the application used to control the devices: the advertised services create the possibility of interactions through apps. Controllable

lighting may be accessed by software applications where the local hardware infrastructure is controlled by software made by another company. Both forms provide ways of discovering links between the devices and their manufacturers. This work suggests that further steps to use the company identifier to explore the available software applications to interact with the devices and the infrastructures that arise: who maintains the infrastructure? Are the emergent networks complete? These raise the question of the who provides infrastructure to study these infrastructures, especially the standards used and the (dis)connections within them. Through this we think about the technological literacy required to engage with the data, to understand their limitations, and how these affect the method.

***We're All Gonna' Make It: Counter-Mapping the 'Cloud' in Cyprus & Ireland* | Paul O'Neill**

Abstract

Taking the similarities between Ireland and Cyprus as a starting point: location at the periphery of Europe; colonial legacy; partitioned state; proximity to larger geopolitical actors; low corporate tax rate and status as regional tech hubs, this paper details a body of practice-based research undertaken by the author in both countries. This research includes the Dublin Infrastructure Tour - an artistic intervention which brings participants through Dublin city to highlight elements of the physical internet infrastructure, alongside the corporate topologies that support it. This allows participants to engage with concerns about our collective relationship with 'Big Tech', while demystifying the technical components upon which the internet functions and challenge techno-solutionist narratives and language - emphasising that the 'cloud' is not ephemeral and is 'stuff you can kick' (Parks, 2015). This paper also discusses the processes and outputs of the author's two month residency at the NeMe Media Arts Centre in Limassol, Cyprus, as part of the European Media Art Platform (EMAP) programme. For this residency, the author is documenting the corporate, physical and social infrastructure of the internet in Limassol using various open-source research techniques, along with participatory approaches including public workshops and exploratory urban walks. The above practice-based work draws influence from the 'one-two punch of new mapping practices and theoretical critique' of critical cartography (Crampton & Krygier, 2010) and counter-mapping, the 'micropolitics of disruption, intervention, and education' of tactical media (Raley, 2009) and uses media archaeology as an art method (Parikka & Hertz, 2012). Such projects are examples of 'critical' media art practice (O'Neill, 2022) - this paper argues that such work often acts as a cultural bellwether for the many complex issues associated with our current networked era, and has the ability to communicate and disseminate these same issues to various publics - be that within the gallery space, online, or through different pedagogical or participatory approaches focused on urban environments, and as such, requires continued study and engagement.

References

- Crampton, J.W. and Krygier, J. 'An introduction to critical cartography'. *ACME: An International Journal for Critical Geographies*, 4(1), pp. 11-33
- Hertz, G. and Parikka, J. (2012) 'Zombie media: Circuit bending media archaeology into an art method', *Leonardo*, 45(5), pp. 424-430
- O'Neill, Paul (2022) *Platform Protocol Place: A practice-based study of critical media art practice (2007-2020)*. PhD thesis, Dublin City University
- Parks, L. (2015) "'Stuff you can kick": Toward a theory of media infrastructures', in Svensson, P. and Goldberg, D.T., eds., *Between Humanities and the Digital*, London: MIT Press, pp. 355- 373
- Raley, R. (2009) *Tactical Media*, University of Minnesota Press, Minnesota.

Can Data/Infrastructure Contribute to Environmentalism in Urban Context? | **Güneş Tavmen**

Abstract

This presentation will consider how environmentalism can take place in a city interwoven with smart city technologies, in ways that go beyond sensing air pollution. First, I will discuss how pollution is presented as an essentially 'urban crisis' in smart city proposals, where data-driven solutions perpetually postpone impending environmental destruction (Halpern and Günel, 2017). I will then use Simondon's concept of transduction to demonstrate the co-creative relationship between data and infrastructure and posit the term data/infrastructure. I will build on this theoretical background to discuss how this process leads to the urban being defined by relational problems that perpetuate the deployment of ever more data technologies. In contrast to this, drawing on Matthew Gandy's (2022) *Natura Urbana* project, which draws attention to the ecological richness of urban environments, I ask how we might find different ways of drawing attention to biodiversity by using digital media in urban environments. That is, how data and infrastructure in the urban environment can be positioned to celebrate the unique forms of vegetation and biodiversity at the edges of the built environment, as opposed to the dominant approach that equates it with environmental degradation. To illustrate this, I will critically discuss illustrative apps that are designed to record biodiversity and wildlife in the urban context to study what types of epistemologies they produce and circulate and whether these contribute to environmentalist approaches in urban spaces.

Synthetic Cities and Cities that Synthesize | **James Steinhoff, Patrick Brodie**

Abstract

Data for the computer vision systems necessary for autonomous vehicles is primarily data about cities. While automated vehicles have had limited success in simplified and rural environments, the increased complexity of urban spaces however presents a much more difficult technical problem for the system to solve. Thus, simulations of cities are now being used to generate synthetic data for training these models. A synthetic city must be made. However, data synthesis is a costly endeavour. The computational power it requires entails a different intervention into the synthetic city: the construction of data centers where cloud compute can be run. This presentation will address not only how "the digital affects the physical," but rather how the physical world continues to present practical limits for data-driven efficiencies. The contingency of urban spaces, and the realities of locked-in infrastructural pathways, decaying systems, and the fallibility of the built environment, means that synthetic cities need to interface with physical cities in almost real-time as the urban environment changes. These increasingly "smart" environments require the resource-intensive inputs and supports of digital infrastructures, which surround the city as they compute its real-time models. These infrastructures, beyond the steel and concrete required for the buildings, also continually increase emissions as long as the grid is still run on fossil fuels (as well as their backup generators). As the effects of anthropogenic climate and environmental change mount, creating droughts, heat islands, floods, waste, etc, how will the synthetic city train models for a sustainable (if climate-changed) city when its material infrastructures continue to amplify the conditions requiring decarbonized digital efficiencies? This presentation will thus reflect on the material and epistemological stakes of synthetic data across its digital and physical environments and infrastructures.

Session 1b Agency, Algorithms and Resistance
Chair: **Lou Brandner**

Páirce Room, KA115

Mass Personalization and the Society-of-One: How AI-Powered Platforms are Rendering a New Social Order | **Hossein Derakhshan**

Abstract

This work-in-progress submission proposes a conceptual model to understand how AI- powered platforms contribute to a prevailing mode of consumption with great potential to generate a new social order: mass (automated) personalization. This model views platforms as a social figuration (Elias, 1982) with two core processes of datafication and personalization and sub-processes of surveillance, categorization, prediction, and fragmentation. In recent years, the focus of social sciences has primarily been on the societal consequences of datafication (surveillance and categorization), with less emphasis placed on the impact of personalization's core processes (prediction and fragmentation). The article explores how AI-driven mass personalization is converting the ideal of the 'market-of-one' which stemmed from marketing and manufacturing into a nascent social order, termed the 'society-of-one' — a symbolic as well as material order where the body and its movements are routinely governed by platforms. The notion of 'society-of-one' revisits the questions which 'filter bubble' (Pariser, 2013) raised, but failed to answer because of its reductive account of humanity as a disembodied mind. It reiterates concerns about societal consequences of a kind of mass personalization that affects bodies in the city as well as minds via technologies such as self-driving cars, mixed-reality headsets and glasses, mobile listening devices and other wearable tools, etc. Mass personalization poses a twofold challenge to the modern liberal democratic order that aspires to autonomy and solidarity through predictive as well as fragmentary processes. It generates an emerging order based on minimum autonomy and maximum fragmentation, thereby posing a serious challenge to the foundations of democracy, justice, and solidarity.

Posthuman Agency in Smart Mobility Services: Exploring Mobilised Everyday Communication and Media Practices in Vienna | **Helena Atteneder**

Abstract

Mobility services in so-called "smart" cities rely on the extensive collection and algorithmic processing of data obtained from various sources, including public administration, digital devices, and urban surveillance systems. This convergence of media infrastructure and "smart" urban mobility infrastructure creates a reciprocal relationship between individual mobility and media practices that shape communication norms and actions. Building upon Rose's concept of posthuman agency (Rose, 2017), which recognizes the interdependence between humans and non-human digital entities, this contribution explores the everyday, mobilised communication and media practices of individuals who regularly use public transport services in the Vienna metropolitan area. Central to the exploration are the interactions between existing mobility infrastructure, the affordances of media and media technologies employed, and the agency exhibited by non-human actors, such as algorithms. Additionally, this research seeks to understand users' perceptions and reflections on these interactions and their resulting impact on individual agency. The research approach adopted in this study acknowledges that the social fabric is constructed through communicative processes and continually renegotiated through everyday practices. Broken down to this study, this means shedding light on how the interrelation between humans and non-human digital others emerges as a synthesis and is always already co-constituted, and how individuals and non-human digital entities "act" in spaces and through everyday communication practices and experiences (Kitchin and Dodge, 2011; Leszczynski, 2015). The data collection methodology combines computer-supported procedures (the app "MeTag" for recording media practices and two technical methods for recording traffic data and exploratory packets of the devices used) with subsequent semi-structured interviews, allowing participants to engage with and reflect upon the results. By contributing to the exploration of the Synthetic City's aspects of everyday life, this interdisciplinary study offers a nuanced understanding of the intricate interplay between mobility services, media practices, and individual agency.

References

Kitchin R and Dodge M (2011) *Code/Space. Software and Everyday Life*. Cambridge: The MIT

Press.

Leszczynski A (2015) Spatial media/ation. *Progress in Human Geography* 39(6). SAGE Publications Ltd: 729–751. DOI: 10.1177/0309132514558443.

Rose G (2017) Posthuman Agency in the Digitally Mediated City: Exteriorization, Individuation, Reinvention. *Annals of the American Association of Geographers* 107(4): 779–793. DOI: 10.1080/24694452.2016.1270195.

Sidelining Synthetic Sidewalks: Toronto's Resistance to Alphabet's Algorithmic Urbanism | **Markus Reisenleitner**

Abstract

In May 2020, Google sister company Sidewalk Labs announced in a post in Medium that it was abandoning Quayside, its ambitious smart city project to develop a derelict, deindustrialized section of Toronto waterfront. While the official PR message released by the tech company blamed the COVID-19 pandemic, technology journalists attributed the move to Google's (and its parent company Alphabet's) established reputation of quickly pulling out of projects that did not proceed smoothly. Only local commentators emphasized the groundswell of resistance among Torontonians, who had vigorously challenged techno-optimist gentrification discourses and the normalisation of predictive data and surveillance regimes accompanying smart city development, juxtaposing Google's PR blasts with an emphasis on entrenched New Urbanist traditions that, in a competing take on gentrification in the area, promoted Toronto's waterfront as a walkable, environmentally friendly, multicultural, and family-friendly foodie/hipster hangout. This paper revisits the events around Quayside by taking a closer look at the diverging urban imaginaries, both intimately associated with gentrification efforts, that ultimately could not be synthesized into a convincing narrative of techno-urbanist futurism facilitating a city's "good life". In other gentrifying global cities such as Los Angeles, politicians and property developers have proven quite successful at articulating and suturing the spread between technology-driven urbanism, on the one hand, and New Urbanism-based imaginaries that emphasize walkability and community, on the other. An examination of Toronto's Quayside reveals the frisson between those competing imaginaries of desirable urban development, while drawing attention to what is specific to the cultures of Toronto's assemblage of fashion and lifestyle, historical lineages, property capitalism, and digital technologies.

Listening Beyond the Algorithm: DIY Internet Radio as an Alternative to Global Music Streaming | **Seán Finnan**

Abstract

While contemporary music listening habits are increasingly mediated by global music streaming services, DIY internet radio stations have proliferated in the past decade as an emergent grassroots infrastructure for localised music communities. As a reaction to the abstract space produced by these streaming services through their stripping of music from its social practices, DIY internet radio stations emphasize the local over the global, the human DJ over the algorithm's recommendation system, and the listener as an involved member of a community rather than a data subject. In doing so, they seek to create independent spaces of music discovery and sharing that uses the possibilities of an old medium in 'radio', alongside the potential of network technologies, to foster tools of individuation that go beyond the algorithmic individuation of global streaming services. In this paper, I use an auto-ethnographic approach to describe my work as an organiser within the field of DIY internet radio in Dublin, and the process of building alternative radio and music infrastructures that seek to produce participatory space, by reaffirming the local and constituent practices of grassroots cultural production. I argue that DIY internet radio is opening up space within contemporary urban centres, both for community to be realised, and also for listening to be mediated by local DJs, artists, and producers. This paper argues that this

practice is conducive to the production of a public, as opposed to the delivery of privatised listening recommendations based on music streaming services' algorithms.

Towards an Algorithmic Nation? Dilemmas Around Synthetic Citizenship in Northern Ireland | **Igor Calzada**

Abstract

Northern Ireland (NI) has consistently been a fragile, disputed city-regional nation. Despite NI's majority favouring EU membership, de facto Brexit, post-pandemic challenges, and the Northern Ireland Protocol have unveiled a profound dilemma: individuals across political lines are questioning aspects of their citizenship. Simultaneously, AI-based applications like ChatGPT and DAOs, alongside decentralized technologies such as blockchain ledgers and data co-operatives, are reshaping the border space between NI, Ireland, and the UK leading to a synthetic citizenship regime. This regime signals a shifting relationship between citizenship, city-regionalised nation, and state sovereignty. Algorithmic mediation pervades smart cities and digital platforms in data-driven urban environments. This paper suggests the 'Algorithmic Nations' approach to articulate this synthetic citizenship regime, where blockchain technology may facilitate identity borders and devolution. This article assesses the implications of this dilemma for a city-regionalised nation enmeshed within the UK, Ireland, and Europe. It explores synthetic citizenship in NI using the 'Algorithmic Nations' framework, addressing (i) cross-bordering, (ii) critical awareness, (iii) digital activism, and (iv) post-pandemic realities. The article concludes with a discussion of three dilemmas and how 'Algorithmic Nations' could integrate NI's synthetic citizenship. This paper aims to spark debate to anticipate technopolitical challenges surrounding synthetic citizenship in NI, Ireland, the UK, and the EU. It draws on a published article by the author in the journal *Citizenship Studies* titled 'The dilemmas around digital citizenship in a Post-Brexit and Post-Pandemic Northern Ireland: Towards an Algorithmic Nation?' part of a Special Issue titled 'Digital Citizenship in the Post-Pandemic Urban Realm' co-edited by the author.

17:10 – 18:30 Reception *Páirce Room, KA115*
Hosted by DCU School of Communications

20:00 Optional: Dinner at *Shouk*
(<https://www.shouk.ie/>)

Second day, Thursday, 7 September 2023

09:00 – 10:40

Paper Session 2:

Generation, Modelling and Design

Chair: **Lou Brandner**

Solas Room, KA202

Surrounding the Fort: Artificial Intelligence, Identity, Art | **Andrea Barcaro**

Abstract

The fort is a powerful image representing the politics of enclosure. In their collaborative monograph, *The Undercommons: Fugitive Planning and Black Study* (2013), Stefano Harney and Fred Moten draw attention to film imagery where the imperial settler is often surrounded by “natives”, creating the false impression that colonialism is a form of self-defence. But while aggression and defence can be rhetorically inverted, the image of the fort is ontologically indisputable. The fort-as-enclosure takes multiple forms. It can be ghettos and gated communities. Echo chambers. It can be Fortress Europe. Our task is not to destroy or appropriate ourselves of the fort, but rather, following Harney and Moten’s logic, to end the world that made the fort possible. Language and symbolism surrounding architecture can be evocative tools for gaining insight into sociocultural issues that are deeply embedded within our urban environments. In this project combining text with AI-powered visuality, I make friends with an algorithm, the Midjourney Bot, and feed it prompts based on quotes by scholars from the fields of posthumanism, postcolonialism, and other branches of critical theory, with a focus on topics surrounding architecture, the human body, and European identity. Scholars such as Katherine Hayles (1999) and Luciana Parisi (2019) show that knowledge production in the era of AI and machine learning has shifted from deductive models towards emergence. As I engage in dialogue with the Midjourney Bot, we jointly develop fresh understandings of existing concepts and create images that allow new elements of consciousness to emerge, stimulating and enriching my political awareness. This process of synthesis is part of what I call the emergence of new forms of posthuman identity, where dialogically embodied practices and materially embedded dialogues with human and nonhuman others can unlock the potential for developing new, productive and politically charged, visions of Europe.

Suburban Dreams: An Exploration of the Diverse German Suburbia via AI-generated Art | **Maik Kiesler**

Abstract

Talking about what is in English plainly called ‘suburbia’, common German resorts to terms like ‘Stadtrand’ (lit. ‘city-fringe’), ‘Vorstadt’ (lit. ‘before-city’) or ‘Speckgürtel’ (lit. ‘bacon-belt’). Here ‘suburbia’ is a solely scientific term, thus disconnecting scientific from common discourse. There is generally few comparative research about definitions of the suburban – internationally as well as, in the German context, nationally (Kiesler 2022). Furthermore, the scientific definition of German suburbia often remains on a mostly undifferentiated, loca- Eon-based level. Thus, disregarding its inherent diversity of social and built structures (Kiesler et al. 2023). The emergence of AI-generated art forms an opportunity to explore not only creative endeavors but also popular consensus by interpreting it, as Pasquinelli calls it, “statistical art” (2019). While often deemed too technical or too perfect, the source behind AI-generated art is nevertheless comprised of an extensive dataset of human created images and understandings (Millet et al. 2023). In my paper I will use Stable AI’s DreamStudio to explore the diverse German suburbia by utilizing said statistical art. Thereby generating images of a ‘synthetic’ suburbia (via suited prompts), I will be able to bridge the gap between an overly narrow scientific and an overly vague common understanding of German suburbia: On the one hand, I will turn i.a. above terms into images, interpreting the popular or scientific consensus behind them. On the other hand, I will also flesh out said terms even further by including built and social structures – seeking commonalities and

differences, and accounting for possible biases during the image generation. By generally taking a hermeneutically perspective and using 'suburbia' as a basic container, I will expand on the often-disregarded diversity of German suburbia, seang my findings in context with established empirical research. Visiting synthetic suburban dreams via AI-generated art allows for a novel exploration of the diverse German suburbia.

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Diffusing History: The Uses and Abuses of Generative AI in Architectural Design | **Joel McKim**

Abstract

Generative AI tools, like Midjourney and Stable Diffusion, have joined the architectural render as a primary method of visualizing architectural design. Patrik Schumacher, principal of Zaha Hadid Architects recently declared, for example, that most of the studio's current projects were being developed with the help of text-to-image generators. While CGI architectural renders provide architects with a form of future-oriented "projective media" (Flusser) that often fuels processes of urban speculation, the architectural images produced by generative AI are fundamentally anchored to the past. The diffusion models of text-to-image generators synthesize existing images and labour and thus arguably represent a new version of the industrialization of collective memory identified by media theorist Bernard Stiegler. This paper will examine the place generative AI is currently occupying within the production pipeline of architectural design. It will question whether these tools can form a relationship with history and memory that is anything other than nostalgia, recirculation, or pastiche. By looking at a number of earlier examples of generative design in architecture (from Lucien Kroll to Reiser & Umemoto) and some promising current experimental projects, the paper will end optimistically by suggesting the potential does exist for AI design tools to be used more productively in an engagement with urban pasts and futures.

Envisioning a New Synthetic City? A Reflection on AI Text-to-Video Generators, Creativity, and our Future Urban Visions | **Diogo Pereira Henriques**

Abstract

Recent developments in automated content production tools, and more specifically using machine learning and artificial intelligence (AI), have been reshaping how the fields of filmmaking and other creative practices relate to and tell stories about our future cities. The somehow illusive "democratization" of these generative models seems to show the potential to disrupt creative practices and education, and ultimately future urban visions. While they have already been generating significant disruptions in present academic and creative practices and communities, these new content production tools have also been showing signals of their emerging influence in the future. For example, one of the key international conferences in the field of machine learning

started to include conditions about the use of text generated from Large Language Models in their ethics guidelines (ICML 2023). More recently, the influential publishing group Springer Nature has announced that they will not allow the use of AI-generated images and videos in their publications, until the ongoing legal issues relating to copyrights of this kind of imagery continue unsolved (Editorial, 2023). Furthermore, some scholars have been critiquing the illusive ways through which these new AI generators may not enhance human creativity, and lead, in fact, to a homogenization of content production in the creative fields (Manovich and Arielli 2021-2023). In this paper, we will present a critical reflection, from a human-centric approach, on these emerging AI text-to video generators, creativity, and how they are already influencing and being used to tell stories about our future cities. In this way, we will follow two main threads: (1) a change in human creativity enhancement by AI text-to video generators, and other future AI imagery; and (2) a potential rise of inequality and creative workers' (future) rights in the synthetic city.

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The Origins and Structure of the Digital City: From SimCity to Big BIM | **Michael Crilly, Alexander Wilson**

Abstract

SimCity is one of the most significant and impactful computer games of the modern computer era, falling at the interface of popular culture and professional planning practice. In this paper we chart the evolution of this computer software with parallels in the evolution of city information modelling and the emergence of digital twins and set out an abbreviated chronology of technological development around digital or synthetic cities. This chronology is presented with a series of overlaid analysis including; (1) identification of the key changes in software and / or technological developments in the supporting city information platforms and operational specifications; (2) the changing purpose or professional applications for the urban modelling process: ranging from digital simulations seeking to improve our understanding of complex urban systems, exploratory roleplay, through to predictive modelling; (3) the widening scope of data and metadata requirements, and the growing complexity of data standards, interoperability, and real-time process; in the context of using 'big data' and default proxy data for decision-making; (4) the requisite levels of agency and control within the urban models, highlighting single or multiple agents operating the controls and the growing impact of artificial intelligence; (5) interface design, and the basis of user interfaces ranging from birds'-eye isometric model and / or map interface to first-person immersive experiences. In conclusion, we consider the underlying 'structures' and 'rules' for data collection, integration, and processing, including the clarity of these rules throughout this technological progression and the interrelationships of these data layers. We illustrate the prevalent and fundamental questions about a digital or synthetic 'model' city regarding the structure of urban parametric data, the purpose to which this data can be applied alongside any supporting rationale for the choices made by decision-making agents.

10:40 – 11:10 Coffee & Tea *Solas Room, KA202*

11:10 – 12:50 **Parallel Paper Session 3**
Session 3a Mobility, Navigation and Circulation *Chuilin Room, KA113*
 Chair: **Marcos Dias**

Sim Citizens: Constructing the Behavioural Infrastructure of a Digital Twin | **Adam Michael Packer**

Abstract

Developers of Automated Driving Systems (ADS) view simulation modelling as fundamental to providing others with confidence and trust in the rigour and safety of Automated Vehicles (AVs) to drive on public roads. Unlike with distance-based approaches of ADS testing, AV developers claim simulation modelling speeds up validation and verification processes by identifying 'edge case' risks and expanding scenario testing capabilities. A key challenge for training ADS is being able to anticipate the actions of others and determining appropriate responses in real-time. There is therefore a need to create 'realistic' simulation models that captures the movement of different road actors. Machine learning methods of analysing traffic sensor data seeks to address this challenge by extracting behaviour models from vehicles, cyclists, and pedestrians. This can then be integrated and represented in digital twin models (or, agent-based simulations) of road environments as sims. Sims represent the behavioural infrastructure of these models by 'imitating' road actor behaviours to iteratively run and perform scenario tests of ADS responses. This paper unpacks relations of acquisition, recognition, tracking, extraction, and conversion involved in processes of producing such sims. I trace the intimate entanglement of assemblages of human, computational, and algorithmic agency in the context of OmniCAV; an Innovate UK-funded multi-sectoral project delivered in Oxfordshire. This project deployed a novel approach that repurposed historical traffic camera data to analyse and develop road movement as behaviour. I question whether sims represent new distributed forms of agency expressed in both real and virtual roads and whether sims challenge how we conceive of 'citizenship' in generative, computational worlds.

"Mobil without fear": Enhancing Urban Public Mobility for People with Anxiety Disorders through Locative Media | **Kai Daniel Preibisch**, Gerit Götzenbrucker, Michaela Griesbeck

Abstract

With the integration of digital planning and positioning systems, previously separate geographical, physical, and media spaces are combined, forming "hybrid" environments (Silva & Sheller, 2015). This has led to the establishment of locative media usage for everyday management in urban public and individual transportation (Ng-Chan, 2015). Passenger assistance and recommendation tools, such as apps, have become the primary means of seeking information and planning individual routes. Consequently, this has been recognized as a comprehensive media transformation in urban media studies (Tosoni et al., 2019). Regrettably, mental illness has been overlooked (Risser et al., 2015) in this transformation process, leaving affected to rely on makeshift strategies to navigate in an environment that is not tailored to their needs. Addressing this research gap, the interdisciplinary project team "Mobil without fear", embarked on an investigation of psychological barriers impeding mobility and media usage in urban public transportation. By employing a sensitive-method mix (Götzenbrucker et al., 2022), including semi-structured interviews, mobility walks, expert interviews, and expert workshops, the team concentrated on identifying barriers in public spaces and media usage. The ultimate objective was to enhance personal mobility through the utilization of urban public transportation. Maximizing predictability at every stage of the trip is essential for alleviating anxiety. By utilizing tools such as digital street views, pictures of locations, and virtual reality, those affected can become more familiar with their surroundings, resulting in a reduction of anxiety during their travel. Planning tools that enable the customization of routes based on specific needs, such as avoiding tunnels, minimizing transfers, and reducing crowded areas, are instrumental in designing trips that are manageable for individuals affected by anxiety disorders. Currently, a follow-up project is in the planning phase to address the urban public mobility of young individuals aged 14-24, encompassing media usage, vulnerability, and climate change.

Transit Cards: Media Objects, Circulation and the Production of Space | **Upasana Bhattacharjee**

Abstract

Transit cards and smart cards are media objects that control access to transit infrastructure in urban spaces. In this paper, I explore Presto Cards in the Greater Toronto Area (similar to the Oyster Card in London) in their capacity to show the logics that govern urban mobility, circulation and space. I understand transit cards as infrastructure that, in their boring yet revelatory detail, serve as obscure media objects that remain concealed, ambiguous and far from the centre of socioeconomic organisations and systems. Media objects work within legacies of governance and modulation, and as evolving components that challenge, explain and reveal their socio-temporal contexts in greater detail (Parks, 2016; Star, 1999). Through a case study of Toronto's Presto Cards, I situate transit cards as a component of the synthetic city of circulation, space and place. Transit cards are materialist media objects, and by investigating the standards that shape these media objects, we can understand their potency not merely in governing circulation, but also as media of producing space (Wilson, 2016; Kittler, 1999; McLuhan, 1994; Innis, 1949). They break away from the legacy of earlier media objects in their complete imperceptibility to human senses. The information that they communicate is efficient, interoperable, reusable, recordable and smooth – and it is not for people to perceive, but rather for card readers, datasets and algorithms. I locate them as a form of media that enables greater control over space and renders both space and circulation legible and visible to the state. This leads to a separation between the concepts of space and place such that people's relationships with place is entirely invisibilized in favour of greater regulatory control over space. Transit cards thus produce space as an autonomous and uniform entity to be traversed in, without the associated identity of the places that it is composed of. Such logics of intermediary and transit-oriented media are particularly contentious in territories that have a history of violence with respect to land rights and ownership. Their infrastructural and nearly unrecognised necessity, when excavated, can thus reveal logics and politics inherent to the regulation, visibility and management of urban space.

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Introducing Playful Navigation in the City | **Brett Binst, Annelien Smets**

Abstract

Urban dwellers increasingly rely on digital information sources to navigate the modern city (Gursoy et al., 2017; Xiang et al., 2015). Therefore, the available information and the so-called 'digital layer' of contemporary cities mediate urban life (Smets et al., 2021). In current literature on hospitality consumers, the general assumption is that they are rational actors, seeking to mitigate uncertainty (Gursoy, 2019). However, qualitative research about how urban dwellers currently navigate the city is lacking. Based on 119 interviews and through a grounded theory analysis, we build a first understanding of the properties of this digital layer, how urban dwellers interact with it, and how it

influences urban navigation. We find that it brings the world to our fingertips, unites hospitality customers through review platforms, and creates a personalized map of the physical city. We identify two distinct navigation modes: Instrumental navigation involves a rational approach, where individuals carefully select events or places to visit by comparing ratings, reviews, and extensively plan their trips. Ratings and reviews play an important role in this navigation mode because they generate trust in the hospitality product, which is important because they are 'experience goods' and can't be tested before purchase (Gursoy, 2019). This mode is driven by a desire for certainty and is typically employed in unfamiliar and high-stakes situations, like a first date. Conversely, playful navigation focuses on the intrinsic value of the navigation process. It encompasses three subtypes: social navigation, driven by relationship-building and affection and relying on social networks for recommendations; go-with-the-flow mode, motivated by curiosity and characterized by spontaneous decision-making; and flaneur mode, characterized by receptivity and resonance and motivated by a desire for distinction. These navigation modes are more prevalent in familiar and low-stakes contexts, such as spending a leisurely Saturday afternoon in one's own city. Our research challenges the notion of urban dwellers as instrumental navigators (Gursoy, 2019) and emphasizes the importance of considering both playful and instrumental navigation. The different identified navigation modes and their characteristics can inform future digital media design.

Online/On-ground: Instant Grocery Delivery Platforms and Commercial Gentrification in New York City | **Triparnee Kushari**

Abstract

Before digital delivery applications, the daily life of an urbanite was a site of unavoidable human interaction. Instant delivery apps, which became much more widespread during the COVID-19 pandemic, have changed that dynamic to a certain extent. As one delivery company puts it in an ad, groceries are now 'teleported' to one's doorstep, erasing the human labor in the process. The tipping screen and the rare calls from a lost delivery driver are the only reminders of the actual people providing these services. Identifying information that is intentionally obscured or made present to delivery app users can help to reveal how these apps guide their decision making, and their effects on underlying dynamics of evolving platform urbanism. In this study, I have analyzed the content generated by instant grocery delivery platforms in New York City (focusing on current market leaders GoPuff, Getir, Gorillas, Jokr, and Dashmart, along with now-defunct Buyk and Fridge No More) to identify how the process of buying groceries and food—something so essential to daily life in the city for time-pressed professionals—has been transformed to make their services attractive to an upscale consumer submarket. I also investigated the legal status of these companies' on-ground infrastructure (known as 'dark stores' and only nominally open to the public) and the previous uses of dark store locations to reveal the urban processes of commercial gentrification and marginalization. Preliminary findings show that advertisements and promotional media generated by these companies affirm assumptions about differences in occupation by race and gender and hide or minimize the labor behind instant deliveries to the consumer. At the same time, the dark stores or small-scale warehouses operated by these companies take up commercial space within neighborhoods, removing access to in-person shopping experiences to local residents and providing access to the 'convenience' of delivery to consumers who can afford to pay the premium.

Session 3b Hybridity, Hyperreality and Location
Chair: **Scott Rodgers**

Páirce Room, KA115

Imagining and Imaging the Future via Screen Representations of the Hyperreal City | **Jennifer O'Meara**

Abstract

Since early cinema, and Metropolis's (1927) expressionist presentation of a science-fiction city,

screen media has returned time and again to stories set in the (near) future. These fictional spaces depend on a range of imaginative designs from creative workers, including art directors and production and costume designers, and have led to the iconic visual worlds of films such as *Blade Runner* (1982) and *Brazil* (1985). Here, futuristic architecture is combined with high-tech gadgets and a semiotically dense urban landscape, often cluttered with commercial signage and neon lights, and rendered using a mix of on-set and post-production effects, including superimpositions (see: Brooker 2006; L.M.L. Arana 2020). This paper will examine the two way flow of influence between such sci-fi representations of cities and actual developments in urban spaces, as a result of rapid developments in immersive technologies such as augmented reality and mixed reality. I will focus, in particular, on the aesthetics of personalized advertising signage in Keiichi Matsuda's concept film, *Hyper-reality* (2016), shot in Medellín, Colombia in collaboration with a 'design fiction' company, Fractal, and which I will compare to altering advertising signage (via a pair of reality-revealing sunglasses) in *They Live* (1988). While *Hyper-reality* promptly received praise by mobile computing scholars, for the way it "proposed promising uses of mixed reality in various application domains, including shopping and advertising" (Park, Zhang and Lee, 2018), I will examine how both films provide more critical commentaries on the damaging aspects of signs that co-opt our gaze in urban spaces. Overall, my paper will argue that screen representations of the hyperreal city have played, and continue to play, a significant role in both imagining high-tech hyperreal cities, and in putting forth creative designs for how they could, or should, look.

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Understanding Hybrid Space: How Media Change Experiences of Being There | **Esther Hammelburg**

Abstract

This paper focuses on the aspect of synthesis in the conference theme by examining hybrid – or synthetic – space. It claims that the synthetic city is not (only) a foreseen future that will be created through AR/XR technologies or the expanding influence of AI, but rather that we are already living in it. Many of our experiences of "being there" are compositions of the physical and the mediated. We are all continuously involved in both physical and several mediated environments at the same time – and these environments deeply influence each other. The conceptualization of hybrid space in this paper derives from an extensive study of media practices at three large Dutch (pre-COVID-19) festivals: Oerol Festival 2017, 3FM Serious Request 2017, and Pride Amsterdam 2018. Taking a practice approach, this research combined a core of ethnographic fieldwork – online and offline observations and interviews with 379 event-joiners – with digital and visual methods for researching online and offline event environments. For this paper, the notion of hybrid space is further developed through observations of social media posting during elections, the COVID-19 pandemic, noteworthy weather conditions, Britain's farewell to Queen Elisabeth II, and perhaps an event that will take place over summer.

Synthetic Campuses and the Contemporary Digital Kaleidoscope of Learning | Georgiana Mihaela Varna, **Michael Crilly**

Abstract

This paper is part of a larger body of work we are developing, focused on 'the University', both a collaborative space of knowledge production and dissemination, but also a 'place of learning in the city/town/village/region' where it is geographically embedded. It focuses on how the academic campus spaces have evolved in the last 800 years, beyond the restrictions of physical space, into innovative, current forms of hybrid, 'synthetic campuses'. We explore this through a kaleidoscope of detailed case studies, looking at a series of different British institutions and their efforts to balance, and merge physical and virtual learning practices. These include:

(1) The Universities of Glasgow (founded 1475) and Newcastle (1963, former college of York University), explored as the two traditional academic institutions, sharing key similarities in their global and local urban economic regeneration visions and ambitions for their home cities, their experiences of large campus re-development and expansion schemes, and their establishment of specific urban partnerships. We analyse the radical shift to online-only survival mode activities during the height of the Covid19 pandemic, as well as more recent shared experiences in re-establishing synchronous, collaborative, and heuristic learning.

(2) 'Global Campus' expansion experiences of the new universities of Northumbria (London & Amsterdam) and Heriot-Watt (Dubai) and the declining benefits of colocation within an individual location.

(3) The specific Open University experiences of established remote and part-time learning, moving from 'broadcast' to 'multimedia', and then to physical campus development at Milton Keynes, including the business impacts of many traditional institutions reducing the niche of delivering structured learning, following the OU model.

(4) The development of 'Second Life' massive open online courses (MOOCs), and other pioneering virtual environments being used currently as platforms for established educational institutions.

We conclude with several in-depth analytical reflections on how the case studies illustrate new forms of hybrid 'synthetic campuses' that are emerging today, and by proposing a new, holistic framework to understand this unique type of urban space. We believe our efforts can help spark and cement further research into this new subfield of urban studies, we have labelled as 'university urbanism'.

Where You Are: Location Data in the Synthetic City | **Conor McGarrigle**

Abstract

In 2012 Google's Eric Schmidt, in the infamous creepy line interview, claimed that Google (we) "know where you are, know where you've been and can more or less guess what you're thinking". Schmidt, no stranger to saying the quiet part aloud, tellingly connected locational knowledge with intent and prediction and in doing so placed location at the heart of Google's data-extractivist model. This paper argues that as the size and complexity of AI models increases cities are key sites of both training data extraction and model deployment, with technology companies competing to build models that offer machinic understandings of cities as both operational and lived spaces. These efforts to model cities as complex relational spaces are built on understandings of location that evolved from urban theorists, activists and artists such as Henri Lefebvre, Jane Jacobs and Locative Media artists. The paper proposes location data as uniquely characteristic of urban life and individual ways of being. Location contextualises myriad other data comprising the data deluge of the digitally mediated city, binding these data together, connecting bodies, places, and movements to their digital doubles. They qualify, relativise and add value to other data; opening digital actions, gestures and traces however idiosyncratic to algorithmic reasoning. The extractivist data models of the digital economy thus weaponise our relationships with place. Turning the relations and qualities that make cities worth living into parameters for training AI that colonises everyday life. Through tracing a near history of location as data, from locative media art that paralleled the emergence of consumer location aware devices in the early 2000s to the urban vision of Alphabet's (Google's) Sidewalk Labs and the marketplace for location data, the paper

demonstrates that primacy of location data in the synthetic city and its role in the erosion of urban privacy.

Addressing Synthesis | **Rebecca Ross**

Abstract

In this paper I expand upon the definition of synthesis given in the CFP, “the composition or combination of parts or elements so as to form a whole,” from the perspective of addressing. I argue that contemporary addressing can be understood as the coordination of relationships between synthetic and “usual realities.” Drawing on a larger project in progress on the history and contemporary stakes of encoded forms of addressing, a series of empirical fragments will be considered, including:

- The titling of Grime Artist Dizzy Rascal’s 2020 album E3 AF in the context of wider addressing practices in London, UK
- Uses of virtual private networks (VPNs) to spoof location and gain access to restricted resources in contrast to uses of quick response (QR) codes to provide an immediate interface between geographic and networked locations
- An introduction to the addressing of Antarctica including its status as a relatively unaddressed place in relation to its vulnerability, as well as its special significance for philatelists.

With reference to prior work on address, addressing, and addressability, by Ranjodh Singh Dhaliwal (2022) and Benjamin Bratton (2016), my goal will be to sketch out how addressing structures productive interplays between synthetic and “usual” realities. My hypothesis is that understandings of the processes of synthesis from the perspective of addressing usefully focuses attention on the potential forms and implications of different possible synthesized futures including what they afford to, and the ways in which they limit, our emerging post-humanity.

12:50 – 13:50	Lunch Including meeting of ECREA Media, Cities and Space Section from 13:00	<i>Solas Room, KA202</i>
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13:50 – 15:30	Parallel Paper Session 4	
Session 4a	Governance, Politics and Place Chair: Diogo Pereira Henriques	<i>Chuilín Room, KA113</i>

Governing Synthetic Urbanism and Its Shortcomings: Perspectives from the Global South | **Jess Reia**

Abstract

As the urban population grows worldwide and the pandemic and climate crisis exacerbate inequalities, local governments are faced with difficult decisions. Often, officials have to tackle problems with constrained budgets and inadequate infrastructures. The lack of public funding and a myriad of issues to be dealt with – quickly and effectively – offer a fertile ground for industry actors to approach mayors and city councillors with promises of innovative services and products. Synthetic urbanism is emerging as a potential solution for several urban problems, primarily through automated decision-making systems and the ubiquity of large volumes of data. In a country like Brazil, with over 5.000 municipalities and centuries of structural inequality, artificial intelligence-based systems are becoming a trend rapidly adopted by local governments, often under the guidance of consultancy firms, and without proper ethical guidelines or governance mechanisms to safeguard the rights of people and communities. From smart cities to innovation hubs, urban territories become an ecosystem of actors and interests that reflect the ramifications of (transnational and local) corporate power. Building upon a work that started to

investigate the consequences of datafication in Brazilian cities in 2017, this paper focuses on the implications of synthetic urbanism in Brazil – with valuable lessons for the international community. The main questions guiding this project are: (1) How is synthetic urbanism being developed in Brazil?; (2) Who are the actors in this ecosystem, and what roles do they play? (3) What is the framework in place to deal with the rise of synthetic urbanism, and what are the ethical and governance gaps we must address? This article presents findings of a work in progress and draws from theoretical frameworks from Critical Data Studies, Public Policy, and Urban Communication; policy and legal analysis; participant observation; access information requests; and interviews with relevant stakeholders.

Unveiling the Nexus of Smart Cities, the Internet of Things, and Platform Urbanism: Insights from Singapore, Indonesia, and Malaysia | Reza Shaker, **James McGrail**, Bart Barendregt

Abstract

We present an investigation into the interplay between smart cities, the Internet of Things (IoT), and platform urbanism, employing a multi-methodological approach encompassing thick data (ethnography) and big data (text mining). By combining qualitative and quantitative techniques, we aim to deepen our understanding of the complex dynamics shaping urban environments in the digital age. Our study primarily focuses on Singapore as a rich source of ethnographic insights. Through immersive fieldwork and in-depth interviews with key stakeholders, we seek to capture the lived experiences and perspectives of individuals within Singapore's smart city ecosystem. We strive to unravel the nuanced social, cultural, political, and economic dimensions underlying the implementation and adoption of smart city technologies and IoT infrastructure. However, our research extends beyond the confines of Singapore, encompassing Indonesia and Malaysia for text mining purposes. We analyse vast repositories of textual data from online sources, i.e., social media (~24,000 tweets) and academic articles (~17,000 PDFs from 54 scholarly journals). This approach enables us to longitudinally identify the trajectories of patterns, trends, discussions, and discourses surrounding smart city initiatives and the IoT across Indonesia, Malaysia, and Singapore. Our preliminary findings shed light on the multifaceted nature of platform urbanism, where digital platforms play a central role in orchestrating urban life, governance, and service delivery. We uncover how smart city technologies and IoT deployments intersect with various socio-cultural factors, urban policies, and citizen engagement strategies. By employing a multidisciplinary approach, encompassing both thick and big data, this research contributes to the growing field of digital urbanism and digital anthropology. Our findings provide critical insights for policymakers, urban planners, and technology developers, facilitating evidence-based decision-making processes and fostering sustainable and inclusive smart city development strategies.

Configuring Smartness in Post-Conflict Belfast, N. Ireland: Smart Cities, Peace Walls and Digital Divides | **Emmet Donaghey**

Abstract

25 years after the Good Friday (Peace) Agreement, Belfast remains in a fragile peace with fragmented governance structures and sparse socio-economic peace dividends. In the case of North Belfast, an area with 5 of the top 10 deprived areas in all of Northern Ireland – insular single identity communities remain separated from each-other and the urban core through a myriad of peace walls, hidden barriers, and divisive built environment architecture, with communities beholden to a web of power relations and restive forces. The city government's adoption of a smart city framework visions innovation as the catalyst for economic and societal progress in the face of socio-technical transition challenges. Through a qualitative, interpretivist research design, this study adopted a quadruple helix approach to understand local lived experiences, as levelling all individuals to a statistical number neglects the uniqueness and complexities of individuals and issues in smart city developments. Preliminary results reveal that unpacking of the current

framework shows that it tends to adopt and appropriate the language of the moment, neglecting socio-historical dimensions of the local community and city fabric. When finer details are unpacked and the technical language is stripped away, questions arise of how it will translate to local socio-economic and quality of life differences for the lives of citizens in areas of multiple deprivation. Questions of the right to the city in Belfast are framed within a neo-liberal perspective on innovation, with association with the idea of 'smartness' currently rooted in narratives, logics, practices, and symbolism of corporate-led developments.

Could smart urbanism redefine the politics of a city? Exploring the Indian case of a smart city | **Sejal Chandak**

Abstract

Smart city currently is the most prominent umbrella term for digitalization of urban spaces. From the UN to the EU, smart city finds a place in the visions of future urbanism. On one hand cities have been the center of political struggles. On another, an often-repeated trope is the depoliticized nature of technologies. While critical scholars have argued effectively the political nature of tech development and deployment, an important question is to understand the impact of smart urbanism on the politics in a city. Does digitalization facilitate political discussions in a city, or does it reduce the space for such contestations? For this, in my work I study the smart city mission in India. India announced a 5-year 100 smart city mission in the year 2015. The vision was to accelerate the digital growth of the Indian cities. Interestingly, the mission chose to establish a special purpose vehicle. This SPV is a limited company; and separate from the municipal corporation (urban local body) of the city. The members in the SPV are nominated by the Central, the State and the ULB. In contrast to a municipal corporation which is democratically elected, the SPV is not. Can this then have an impact over the political deliberations and contestations in a city? Has this new mode of governance increased or decreased the space for political deliberations on growth? The Indian model separates the smart urbanism from its traditional governance institution and provides a unique case-study to explore the question of politics in digital urbanism.

Taking a walk in the synthetic city | **Joe Bourne**, Naomi Jacobs, Nuri Kwon, Louise Mullagh

Abstract

Here, we describe a project designed to explore how creative design methods can support the development of ethical policy for public space Internet of Things deployments. This work is also intended to support communication, collaboration and consultation with the public about what the imaginings, impacts and implications of sensors, data collection and new technology in urban spaces can be. In collaboration with local authorities at various urban locations around the UK with different scales and environments, we imagined a digital urban future in which we synthesised existing deployments with potential futures of emerging technology in public space. We then designed, created and deployed physical artefacts from this imagined future into the here-and-now. Through walking workshops, we explored these synthetic cities and spaces with various stakeholders including place managers, digital specialists and local residents, by leading them on a guided tour of these deployments; real and fictional combined. This tangible, yet synthetic experience created a situated testbed based on creative methods. We also constructed a synthetic city in a virtual space (Gathertown) for each urban location. These included abstracted elements to represent the key features of the geographic location and place. The synthetic elements which are both artifactual and virtual give participants space to imagine, explore and challenge data driven emerging technology and its impacts on places and spaces. These methods can be used to consult in a way which equally values technical expertise, lived experience and emotional response. This can then inform participatory policy for the transformation of cities. The goal is to support digitally augmented cities which are trustworthy,

ethical and do not exclude or exploit their inhabitants and visitors.

Session 4b Art, Performance and Interactivity
Chair: **Marcos Dias**

Páirce Room, KA115

I Have a Dream – ABBA: Voyage and Spectral Futurity in the Synthetic City | **Claudia Brazzale** and **Lynne McCarthy**

Abstract

In 2022 the Swedish pop legendary band Abba ‘returned’ to the stage with a new concept of concert: ABBA:Voyage, a blend of virtual, recorded and live performance centred on the holographic bodies of the band members moving around the stage as they appeared in 1977. Dubbed as ‘ABBAtars’ these are computer-generated digital humans – synthesised through motion capture technology by their original current day counterparts and stand-in actors – whose voices are also a synthesis of 1970s’ recordings and the live backing of a ten-member band. The show has been running five days a week in the Ikea’s custom-made flat-packed Abba’s arena equipped with a self-contained pop-up style festival village in a secluded area of London’s Olympic Park. Seemingly independent and unconnected from local infrastructures, Abba’s arena is directly fed an international audience by a dedicated train station. Recalling the hauntological structure first described by Mark Fisher, Abba’s hybrid performance draws from the past to imagine the future through a spectacle of high technology and 70s nostalgia that conjures up new modes of ontological appearance: Abba’s spectral figures moving between the digital and the physical. This ‘synthetic corporeality’, which rests on disembodied hypervisibility, erases the physical backstage labour that upholds it signalling the receding physical body in urban spaces which may also be perceived through other examples of platform workers in dark kitchens. While considering the potentiality of these modes, this joint presentation will interrogate their limits and their impact on our experiences in the city. Considering Abba:Voyage in relation to the synthetic city, we will analyse how the liminality of both its narrative and representation as well as its self-secluding/contained physical location, presence and architecture anticipates the ways in which futurity and sociality are changing in urban contexts.

Touching Aesthetics of a Synthetic Museum: Nancy, Varda and Marker in Virtual Reality | **Jaka Lombar**

Abstract

The computational agency emerging from a limitless space generated in a virtual environment seems perfectly suited for a museum that addresses the future of the image and the history of new media. Yet the proximity to these emergent spaces of experimentation also reveals their haptic shortcomings. Such is the case of Chris Marker’s museum in the virtual world platform Second Life, as presented in the series *Agnès de ci de là Varda* (2011), in which Agnes Varda visits and explores the simulation of an institution that has become a staple of modern urban life, namely a contemporary art museum. The aftermath of Marker’s and Varda’s artistic project also reveals that the synthetic aspirations of the virtually generated environments also rest on the materiality and maintenance of the real world. After Marker’s passing, the lack of funding put the museum in a precarious position of being deleted from the metaverse in which it was situated, and only after the intervention of the Centre Pompidou, an urban contemporary art museum par excellence, was the rent situation for the virtual museum resolved. This paper will approach the synthetic museum as a space of creative world-building that can be contrasted with the failure of the current technologies to provide an authentic or convincingly tactile world to match the immersive impulse. Jean-Luc Nancy’s thought offers a model of the tactile that foregrounds the aesthetics of withdrawal present within every contact, precisely as it is removed and as it sets in motion the notion of distancing. Here the spectacle of computational agency is counteracted with

tension, slippage and even resistance of the haptic in order to prioritise the thinking, wondering and lingering that reaffirms Nancy's formulation that "the law of touching is separation".

Interactive Monuments in the Digitally Mediated City: Examining the Potential of Virtual Objects in Physical Space | **István László**

Abstract

This practice-based intervention examines the participatory potential of virtual 3D objects in urban space and tests their role as intangible yet interactive artefacts and their capability of reconfiguring urban encounters. Using Augmented Reality (AR), the intervention visualizes removed monuments from Dublin, in their transitory state, to explore how virtual objects impact our perceptions of collective memory and new forms of memory-making in urban space. The performative intervention examines the role of virtual 3D objects as one of the actants in an assemblage of AR, participation and urban space. The virtual installation takes place at the Irish Museum of Modern Art (IMMA), between 16th and 30th of June 2023, and addresses both the past (colonial) and present contexts to give participants an opportunity to express their views towards the changing role of monuments. It aims to connect individuals with shared urban histories and enable them to reflect on the role of digitally augmented experiences of urban space and their future potential as cultural environments. Through an ethnographic and arts-based methodological approach, including participant observation and interviews, the intervention involves the collection of qualitative data from participants who interact with the virtual objects in public space and analyses the ways in which the objects impact the spatial and social dynamics of this assemblage in the urban environment. Through a PowerPoint presentation, which will include the technical process in creating the project, images and video recordings of the AR installation at IMMA, this project will focus on the current capacity of virtual 3D objects as actants in a performative intervention, and reflect on the cultural and future potential of digitally augmented artefacts in urban space.

The Performative Machine and the Synthetic City: Analysing the Role of Performativity in Contemporary Urban Space | **Marcos Dias**

Abstract:

Urban life is increasingly subject to control exercised by artificial intelligence (AI), through technologies such as automated traffic control systems, facial detection surveillance systems and predictive policing software. While such technologies support and extend the concept of the smart city and its aim to increase the efficiency of urban infrastructure systems for a variety of purposes (optimisation of resources, population control, environmental protection, policing), they are also unpredictable and performative, due to their biases and limitations, such as their ability to access urban data. In this scenario, AI systems fulfil the role of performative machines, which hold 'abstract potential that is actualised through the act of performing', and therefore remain 'in a constant state of becoming' (Dias, 2021: 82). As AI systems become more prevalent and widespread in urban space, it is important that we acknowledge their status as performative machines interacting with several other actants (or performers) in the stage of the city, including the 'human-machine'. I argue that performativity is a key factor in the assemblage of human, technology, media and urban machines, where each of them 'perform' to each other, both intentionally and unintentionally. These performative assemblages challenge the perceived extent, impact and efficiency of AI and technological systems in urban space. In this paper I outline artistic projects that illustrate this process through speculative future scenarios, and I also analyse accounts of performativity in urban space where AI and other technological systems are repurposed or disrupted, both unintendedly and with specific purposes.

Reference

Dias, 2021. *The Machinic City: Media, Performance and Participation*. Manchester: Manchester University Press.

Wish Mango Tree: In Search of a Sensitive City | Valzeli Sampaio, **Acilon Cavalcante**

Abstract

This essay presents the creation process of the augmented reality artistic project "Wish Mango Tree," a site-specific artistic intervention in both physical and augmented reality form on the mango trees in the city of Belém, using an electronic tagging device printed on steel plates. The project promotes interaction between individuals: humans and trees. The digital content from a database of wishes is triggered through the AR application. The artistic intervention aims to bring visibility to the mango trees and the social and ecological implications of a metropolis built in the heart of the rainforest. The project's political dimension is revealed through the activation of collective memory among these individuals, provoking questions and commitments from the subjects involved: trees, people, and institutions. It is a hybrid object between art and digital design, promoting creation and experimentation associated with a historical, social, cultural, sustainable, and technological context. The mobile application invites everyone to "hang" their wishes, transforming the mango trees into receptacles for the aspirations of the people who visit them. The application remotely facilitates a networked experience, triggering a physical experience at the main trees in the square, thereby making the cloud of notes on the leaves of these trees visible. The project seeks a sensitive city through art and technology, involving experimentation and creation, experienced through a cellphones, making it a physical and virtual, and thus, hybrid intervention. The project takes public space as a production space, and the potential outcomes of specific contexts and modes of presentation and circulation can modify the interactor's experience with nature and the city.

15:30 – 16:30 Closing Keynote: **Alison Powell** *Solas Room, KA202*
Chair: **Scott Rodgers**

Undoing Optimization – Synthetic Cities and their Citizenships

Abstract

This talk unpacks the problems with and potential responses to the tendency towards *optimization* in socio-technical practice. Looking across twenty years of 'smart city' efforts it provides new ways of seeing urban entanglements, looking at the frictions and tensions surrounding the development and management of *data commons*, and showing how the development of solidarity and acceptance of hybridizing knowledge can reinvigorate ways to live together. Throughout the past twenty years a series of different technological frameworks have normalized and directed civic action towards ends that fit within overall frameworks of optimization. Undoing these dynamics requires an attention to friction and tension, as well as an attention to the potential other ways of understanding and connecting different forms of knowledge, including the datafied knowledge of sensing systems as well as other ways of knowing. Examining 'smartness' in historical context situates the claims and practices surrounding the 'synthetic' city. The ways that different technologies present possibilities of knowing cities and citizens is significant in framing how citizenship, participation and politics are structured. This talk leans into the frictions to reveal how assumptions about technology structure assumptions about cities and citizenship, as well as some of the possible ways to undo those assumptions.

16:30 – 17:00 **Conference wrap-up and future plans** *Solas Room, KA202*

17:30 Optional: Central Dublin outing

