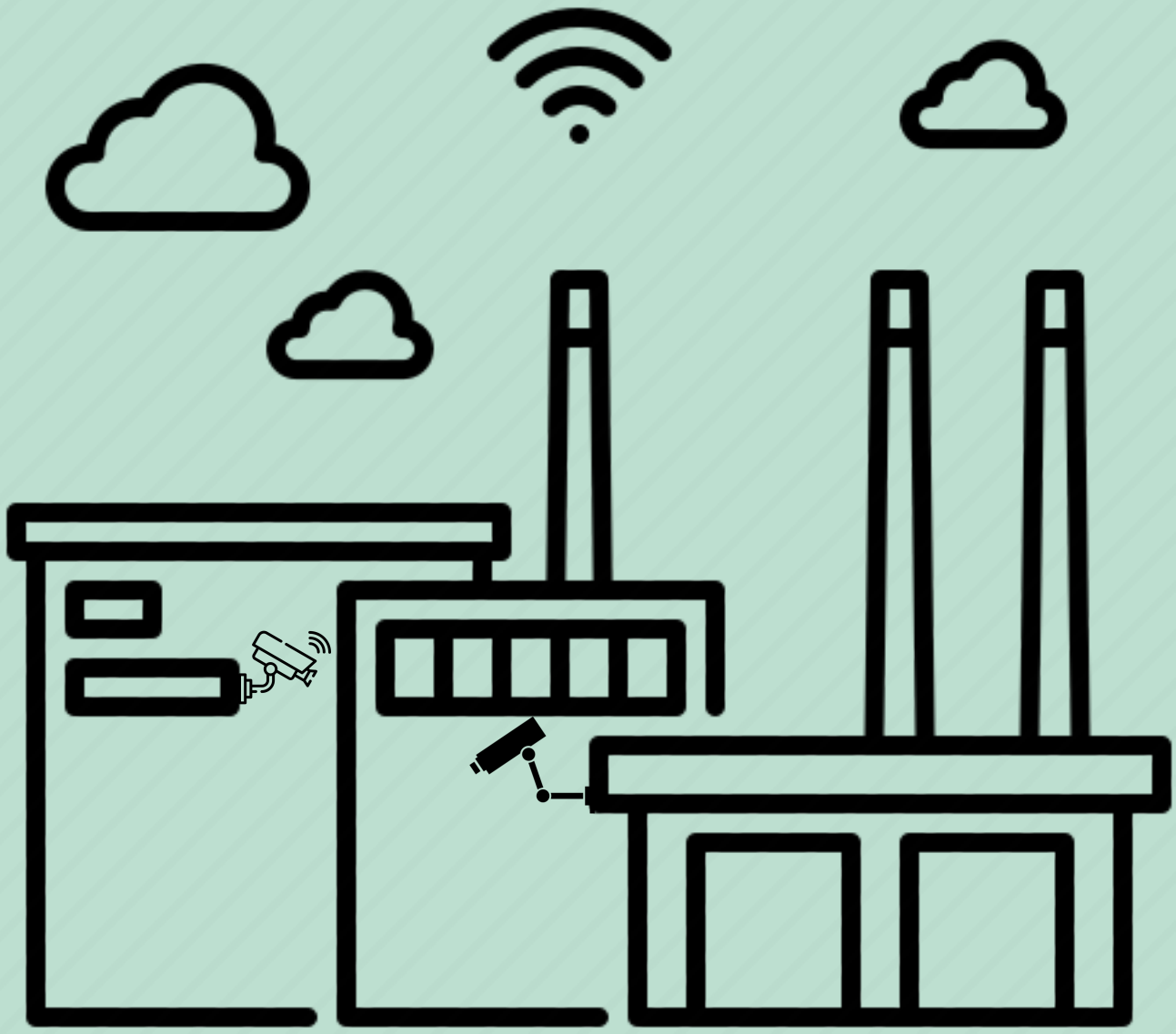
Ethnographies of Urban Data and Technology

20 - 21 of October 2022
IT University of Copenhagen



Conference Program and Speakers

DANMARKS FRIE FORSKNINGSFOND

IT-UNIVERSITETET I KØBENHAVN

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Day 1		
9:15 - 9:30	Introduction and welcome	Steffen Dalsgaard, Mikkel Bille, Rasmus Haarløv
9:30 - 10:30	Keynote: Data Ethics in Practice	Alison Powell
10:30 - 11:00	Coffee, Tea and Snacks	
11:00 - 11:30	Presentation: Citizen App Lateral Surveillance and Digital Crime Tracking in NYC	Alice Riddell
11:30 - 12:00	Presentation: Concrete Blocks, Bollards and Ha-ha Walls: How Rationales of the Security Industry Shape Our Cities	Stine Illum
12:00 - 12:30	Presentation: Assemblages of home energy rhythms - from the individual to the collective	Sonja Oliveira , Anna Chatzimichali , Ed Atkins
	Lunch	
13:30 - 14:00	Presentation: ‘We Don’t Really Know How Bad It Is’: Youth Sport Coaches In Air Pollution Governance	Fred Hernandez
14:00 - 14:30	Presentation: Weaving the Net: Making a Smart City through Data Workers in Shenzhen	Hailing Zhou and Rachel Douglas-Jones
14:30 - 15:00	Coffee, Tea and Snacks	
15:00 - 16:00	Keynote: Soft City Sensing - a turn to computational humanities in data-driven urbabism	Anders Koed Madsen
16:00 - 16:30	Wrapping up	
18:00	Dinner at MadKlubben Vesterbro (for presenters)	

Day 2		
9:30 - 10:30	Keynote: Cities in a Late Industrial Flame	Kim Fortun
10:30 - 11:00	Coffee, Tea and Snacks	
11:00 - 11:30	Presentation: The emotional body in the main street: individual interpretations of biosensing data	Tomás Pedro, Daniel Paiva, Ana Gonçalves, Daniela Ferreira
11:30 - 12:00	Presentation: The Politics of Ultrafine Particles in Copenhagen	Rasmus Haarløv
Lunch		
13:00 - 13:30	Presentation: Urban Water Supply in the Kathmandu Valley: How Ancient and Modern Water Technology relates Water Supply to Neighbourhoods and Heritage Activism	Monalisa Marhajan and Stefanie Lotter
13:30 - 14:00	Presentation: Smartphone Labors: An Ethnography	Mateusz Halawa
14:05 - 14:30	Wrapping up and Goodbyes	

Contents

Keynote Abstracts

Presentations

Keynote Abstracts

Data Ethics in Practice

Alison Powell
London School of Economics

Ethics as practice in data-driven contexts refers to ways of organizing, acting with, relating to or contesting data. The use of data within urban settings provides a number of specific contexts and practices, intersecting and transcending what might be considered ‘top down’ or ‘bottom up’ dynamics. Data-based governance, management and civic engagement are deeply embedded into the function and experience of cities. Ethnographic methods can surface a range of possibilities for understanding issues of data justice across these contexts and scales. The practices include commercial practices of data-based companies as well as participatory and civic processes, including data activism as well as critical data-based methods model different kinds of engagements with knowledge, with data and with different dynamics of resistance, resilience, and community strength. This makes these practices useful and important ways of understanding the complex dynamics that make up the ethical terrain of smart cities, which I define as urban realms managed at scale with conflicting strands of data and negotiated through a range of knowledge. In this lecture, I reflect therefore reflect on the scales, sites and capacities of data ethics as practice, exploring how these illustrate on how the processes of trust and autonomy modelled through such practices of ethics might connect with other considerations that apply at different scales across urban experience.

Soft City Sensing – a turn to computational humanities in data-driven urbanism

Anders Koed Madsen
Aalborg University Copenhagen

Data-driven urbanism is often entangled with a version of the smart city that prioritizes control over physical objects and downplays the human and political aspects of data. However, the rise of the digital city also come with possibilities for inscribing our relations to urban space (and each other) with more humanistic sensibility. The quali-quantitative character of urban digital traces makes it possible to grasp peoples sensemaking at a large scale and their granularity affords the creation of cartographies that draw issue-relevant boundaries as an alternative to aggregating urban data on pre-defined (bureaucratic) grids. In short, the digital urban landscape makes it possible to create data visualizations and maps that maintain a sensitivity towards citizens own concerns rather than framing urban problems from the top down.

In this talk Anders will introduce the notion of ‘Soft City Sensing’ (SCS) to describe a version of data-driven urbanism that is rooted in digital methods and computational humanities rather than engineering. After outlining the theoretical trajectory and epistemology of SCS Anders will present two concrete cases where he and colleague have practiced this approach with employees from GEHL architects. One is the project ‘Do You Live in a Bubble’ that used data from 300.000 Facebook users to construct an interactive cartography of political diversity Copenhagen. The other project is ’Urban Belonging’ that involved the creation of a photo voice app to make the voices of marginalized communities visible to urban planners. Across these cases Anders will show how SCS ideally involves the data subjects in the interpretation of their own data and how data representations are built with the ambition to ‘slow down reasoning’ among actors that traditionally frame what the city is and should be. This also involves a willingness to revisit central epistemological commitments that currently serve as standards for how to “properly” do data projects.

In sum, SCS is thus both a call for qualitative urban scholars to ponder the possibilities of furthering their urban interest by ‘thinking with algorithms’ while retaining their interpretative ambitions and a call for urban decion-makers to expand their criteria for what serves as valid data inputs to urban planning.

Cities in a Late Industrial Frame

Kim Fortun
University of California Irvine

A late industrial frame draws out ways environmental hazards and harms are produced through historically sedimented, tight couplings between different kinds of systems (technological, ecological, discursive, atmospheric, etc), operating across scale, with increasing intensity. In this presentation, we’ll explore cities through a late industrial frame, considering what both cities themselves and research about cities needs to become to keep pace. In step with arguments that Gregory Bateson moves forward in Steps to an Ecology of Mind, I’ll suggest the need to reach beyond smart cities to what could called (trito) learning cities.

Abstracts

Citizen App: Lateral Surveillance and Digital Crime Tracking in New York City

Alice Riddell
University College London

Citizen is a widely used, live crime and safety tracking app in New York City. Citizen uses AI to monitor police scanners for 911 calls that are relevant to “public safety”, whilst also utilizing user-recorded footage, as users near a crime, fire or accident, are encouraged to ‘go live’ and film the unfolding events. Users comment additional information and post expressive emojis as incidences unravel. In sharing information across a digital network, Citizen functions as both a form of social media and a peer-to-peer surveillance app. Through this lens, my ethnographic research investigates how the digitization of crime redirects everyday behaviour and impacts community relations in increasingly gentrified neighbourhoods in Brooklyn.

Security is by nature spatial. It is driven by concerns of boundaries and access, contesting and negotiating potential threats (Fawaz & Bou Akar, 2012). Within security-controlled spaces, everyday practices become insecure, imbued with an atmosphere of fear and negative imaginaries of the other. My research further explores the ways in which Citizen accentuates the city as a space of security, in which surveillance is lateral and often racialized, and power is negotiated between the state, tech corporations, and the individual urban citizen.

Concrete Blocks, Bollards, and Ha-ha Walls:
How Rationales of the Security Industry Shape Our Cities

Stine Ilum
University of Copenhagen

This paper explores how a certain type of urban technology — physical counterterrorism measures — is developed by two very different types of professions working with urban public space. Namely, landscape architects and security specialists.
Based on 12 months of ethnographic fieldwork among professionals in the newly developed counterterrorism industry in Copenhagen, Denmark, the paper zooms in on a security company and an architecture firm, and their divergent approaches to counterterrorism measures. The paper shows how one approach is based on ideas about mathematic models and calculations, while the other is based on ideas about visual camouflage and nature-based solutions.
The paper also shows how both approaches develop in conflict with local city values and security-skeptical actors. The two companies work hard to establish and promote their approaches and rationales not only about counterterrorism but also about what is best for the city and its citizens, which help legitimize their work in Copenhagen and shape public opinion on counterterrorism, and, ultimately, the materiality of the city.

Assemblages of home energy rhythms - from the individual to the collective

Sonja Oliveira[1]*, Anna Chatzimichali[2], Ed Atkins[3]

1.Department of Architecture, University of Strathclyde, Glasgow, UK;
2.Department of Architecture and the Built Environment, University of the West of England, Bristol, UK;
3. School of Geographical Sciences, University of Bristol, Bristol, UK

Use of energy in our homes entangles with appliances, meters, spaces, bodies, feelings across our neighbours, towns, cities and villages. The social, spatial and technological dimensions of this entangled phenomenon have as yet not been examined across multiple scales. There is also a lack of methodological approaches capable of examining the socio, spatial and technological dimensions involved. This paucity of both empirical, methodological and theoretical insight is particularly significant in the context of Europe's electrification of infrastructures and services with as yet unknown implications on diverse human and other than human needs.

We propose a novel socio-spatial-technological framework inspired by Social Practice Theory and Rhythm analysis to enable new understandings of home energy technologies, data and people entanglements across diverse scales - the individual and the collective. The proposed approach enables 1) new multidimensional understanding of collective responsiveness, especially in relation to energy demand and 2) representation of the rhythms in people's habits shaped by social relations, spatial characteristics, data and technology, as well as 3) new typology of evidence that will assist decarbonisation policy makers to visualise alternative scenarios for equitable energy and digital transitions. In doing so, the approach taken in this paper will generate further insights into community-led, decentralised, and flexible energy projects.

This multi-dimensional understanding will enable researchers, policymakers and practitioners to consider for the first time the multifaceted collective nature of energy use across multiple scales. This new understanding might enable a novel approach to managing electrification of services in a collective, equitable and contextualised way. The socio-rhythmic approach will lend itself to development of a novel class of entanglement typologies involving energy use, technologies , homes and people. These typologies can then better inform the energy sector including electrification decision making such as socially smart grids, energy trading and energy behaviour as well as other sectors where sharing and collective action is demanded such as in emergent environmental and social events. All of this is developing a greater significance and urgency in an era of spiralling energy prices and increasing levels of energy poverty.

'We Don't Really Know How Bad It Is': Youth Sport Coaches In Air Pollution Governance

Fred Hernandez
University of California Irvine

Scientists have long been studying the effects of air pollution on sports performance, especially in the Los Angeles area. For instance, in 1967, data from the boys cross country running team at San Marino High School, in Los Angeles' San Gabriel Valley (SGV), was used to analyze the connection between race times and ambient oxidative pollution (Wayne et al.). In the late 1970s and early 1980s, there was a flurry of renewed interest in understanding the effect of air pollution on sports performance due to Los Angeles hosting the 1984 Olympic Games (Shephard, 1984), and being world renowned for its smog (Jacobs and Kelly, 2015). Much of this research is focussed on high-level sports, seeking to quantify the relationship between air pollution and performance based on competitive results and macro level measurements of

pollution. This paper eskews the previous foci and instead highlights the everyday ways that coaches wrangle and interpret air pollution data. The author is currently engaged in a year-long study in which public school sports coaches have been outfitted with commercially available, keychain air quality sensors that convey real-time air pollution conditions. When linked to the coach's smartphone, the sensor application generates localized maps describing air pollution conditions over time.

Based on first round interviews and ethnographic observations with coaches, there exist a range of attitudes about air pollution, from concern to disregard, as well as descriptions of the overlapping governance hierarchies in charge of determining air pollution policy. For example, while school coaches can make safety decisions regarding many environmental hazards, air quality being a key one in the SGV due to overlapping issues of high levels of vehicle induced air pollution as well as yearly wildfires, the tools to make such decisions are limited. Coaches most often rely on the direction of school officials. The use of keychain monitors thus offers coaches direct access to air quality data they have collected and interactive modes of visualizing the information. Perhaps just as important is that the monitors offer human-level information; that is to say that the keychain monitors measure the air coaches and athletes are training in. With seven major highways bisecting the SGV, and more than 2 million residents, there are numerous schools bordering high traffic roadways with coaches training their athletes in polluted conditions without clear understanding of their localized air quality. This study's use of the keychain sensors, and the air quality data generated by them, present new topics for sports research allowing for more tailored practices, and offer school personnel added opportunities to learn about and possibly mitigate pollution exposure.

The emotional body in the main street: individual interpretations of biosensing data

Tomás Pedro, Daniel Paiva, Ana Gonçalves, Daniela Ferreira
University of Lisbon

Biosensing is becoming a popular method among urban scholars interested in the experience of urban space. Biosensing refers to the capture of physiological signals such as electrodermal activity, brain activity or heart rate through wearable devices. Such signals can be used to understand individual physical, emotional and cognitive responses to the urban environment. It has been widely argued that biosensing allows scholars to reduce the burden on research participants, while obtaining more precise data on the affectivity of urban space. However, biosensing studies show a different scenario. It has been shown that biosensing data is often ambiguous and thus must be contextualized with qualitative data through interviews or diaries. Despite the acknowledgement of the necessity of mixing biosensing techniques with qualitative methods, there is little exploration of how research participants understand and interpret biosensing data.

With this in mind, this paper presents the results of a biosensing study which has been conducted in Avenida da Igreja, Lisbon (Portugal) between May and September 2022. In this study, 20 individuals participated in a two-step activity. First, participants undertook individual walks wearing a Empatica E4 wristband, which measures electrodermal activity. Secondly, a post-walk interview in which the biosensing data was elicited was conducted. The results of these study highlight the differing interpretations of biosensing data and the generativity of undertaking in-depth conversations through the elicitation of biosensing data.

Weaving the Net: Making a Smart City through Data Workers in Shenzhen

Hailing Zhou and Rachel Douglas-Jones
IT University of Copenhagen

This presentation focuses on data workers in Shenzhen, who, since 2013, have been recruited to fill positions in the city's Weaving the Net program (zhiwang gongcheng, 織網工程). The program, designed to manage the city's migrant population, is both a local experiments with China's Social Credit system and means of generating a daily set of data to expand smart city provisions. In this article, we approach the Weaving the Net program through data workers themselves. We argue that following data workers and the data they generate expands our understanding both the integration of human-technological assemblages into smart city initiatives and the labor of data generation for programs of state social control.

The Politics of Ultrafine Particles in Copenhagen

Rasmus Haarløv
IT University of Copenhagen

The introduction of Google's Project Air View (PAV) in Copenhagen has re-invigorated local concerns over air pollution. In contrast to established techno-scientific networks which deploy well-known air pollutants as visible in accordance with European limits, the PAV has both contributed with fine-grained measurements at street-level and it has amplified the visibility of new and emerging objects of aerial governance such as ultrafine particles and black carbon over which there is yet to form scientific consensus. The objective of this paper is twofold: Firstly, I analyze the divergent and heterogeneous identifications and representations of air pollution in Copenhagen. Secondly, I demonstrate how groups of concerned citizens in their push against entrenched ways of thinking about air pollution are empowered by the PAV's fine grained air pollution visualizations in different ways. While some citizens deploy the PAV to politicize pollutants stemming from aviation, busses, and smaller vehicles, others propose novel urban green designs. At the same time corporate and governmental actors attempt to depoliticize the problem of air pollution by deferring responsibility to established conventions for which air pollution 'counts'. All in all, I argue that Google's contribution to the data collection of air pollution in Copenhagen is a multi-facetted process, which solidifies existing political environmental contrasts rather than depoliticizing or solving them.

Urban Water Supply in the Kathmandu Valley: How Ancient and Modern Water Technology relates Water Supply to Neighbourhoods and Heritage Activism

Monalisa Marhajan, Stefanie Lotter
Kathmandu University, SOAS University of London

Kathmandu Valley has one of the earliest urban technologies to supply drinking water into the cities through water conduits (documented since 534 AD). Some of these ancient fountains are still in use despite most urban households today relying on piped water and modern sewers. Population growth, urbanisation and internal migration due to a civil war and the earthquakes of 2015 increased the need for water beyond planning. The government hence struggles to supply enough water and therefore households rely now on a combination of sources (piped water, rainwater collection, boreholes, water tanks and ancient water wells) to meet their water needs. This study explores the neighborhood of Alko Hiti, an ancient water well in Patan. It shows how the increase in privately owned boreholes leads to a lowered water table inflicting on the function of the ancient water conduits. At Alko Hiti a communal borehole compensates for the lack of water during the dry season emphasising the need for communal access to water. This paper looks at multiple layers of technologies and their overlap. It explores how attempts to preserve

the ancient heritage of water conduits intersect with local neighborhood governance and new forms of heritage activism.

Smartphone Labors: An Ethnography

Mateusz Halawa
Polish Academy of Sciences

What does platform labor look like in practice? This paper reports from an ongoing ethnographic work on the social lives of smartphones in Warsaw, Poland. The premise of the work is to reconstruct actors and practices in economic live through the notion of "smartphone assemblages," Using approaches of analogue, digital, and visual ethnography, I conceptualise the contours of a new social position of a laborer both enabled and constrained by their attachment to the smartphone. The central case study is an autoethnography of the delivery service Pyszne.pl, for which the author rode during the pandemic lockdown in Warsaw, and during that time conducted interviews and observations of other riders. The supplementary cases include a "lime juicer," whose work is to find, transport, recharge, and restock Lime scooters around the city. The analysis proceeds across these cases, highlighting themes of value creation, power, and surveillance as enacted through the mobile device, with its softwares, algorithms, and infrastructures. Extending the analysis to dark stores and ghost kitchens, I use ethnography to explore the mobile and digital constitution of today's city space.