Universität Zürich UZH

digital GIScience-Colloquium
Tuesday 16:15 / ZOOM Meeting
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Date	Speaker	Title
02.03.2021	**Hugo Spiers, Prof.** Cognitive Neuroscience Experimental Psychology Div of Psychology & Lang Sciences *UCL - London's Global University* More…	What determines navigation ability
23.03.2021	**Somayeh Dodge, Ass. Prof**. Assistant Professor of Spatial Data Scienc *University of California, Santa Barbara* More…	Taking a human-centered data science approach to study movement
13.04.2021	**Clio Andris, Ass. Prof.** Assistant Professor of City & Regional Planning and Interactive Computing *Georgia Institute of Technology, Atlanta* More…	Introduction to Geographic Social Network Analysis and a Case Study of the American Mafia
20.04.2021 *MSc Concept Talk*	**Graf Philipp** UZH GC*	Trends in European Climate Change Perception: Where the Effects of Climate Change go unnoticed
	Georgescu Alexandra-Ioana UZH GIS*	Optimising locations for future return carsharing services: case study of the Swiss carsharing cooperative Mobility
27.04.2021	**Daniel Arribas-Bel, PhD** Senior Lecturer in Geographic Data Science *University of Liverpool, UK* More…	Infusing our understanding of cities with Geographic Data Science

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Date	Speaker	Title
04.05.2021 PhD Concept	**Maria Elena Vargas Amado**	Free-ranging wild boar (Sus scrofa) in Switzerland: casual observations and model-based projections during open and closed season for hunting
11.05.2021	**Song Gao, Ass. Prof**. Assistant Professor, Geospatial *University of Wisconsin, Madison* More…	GeoAI for Human Mobility Analytics
25.05.2021	**Rachel Franklin, Prof.** Spatial Analytics and Modelling Centre for Urban and Regional Development Studies (CURDS) School of Geography, Politics and Sociology *Newcastle University, UK* More…	Sensor Placement, Inequality, and Informed Decision Making in the Smart City

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Date	Speaker	Title
02.03.2021	**Hugo Spiers, Prof.** Cognitive Neuroscience Experimental Psychology Div of Psychology & Lang Sciences *UCL - London's Global University* More…	What determines navigation ability

Abstract
Some people are very good at navigating, others find it a significant challenge. What determines whether someone will succeed or fail to navigate successfully? This lecture will explore what might make someone a good navigator looking at demographics, cultural background and brain structure and function. Data from the mobile app video game Sea Hero Quest project will be presented revealing world-wide patterns in navigation ability of 3.9 million people and the potential for tracking subtle cognitive markers for Alzheimer's disease.

Bio
Hugo Spiers is Professor of Cogntive Neuroscience in the Department of Experimental Psychology. He is an elected member of the Memory Disorders Research Society and an Associate Fellow of the Royal Institute of Navigation. His research explores how our brain constructs representations of the world and uses them to recall the past, navigate the present and imagine the future. His research team use a range of methods including brain imaging, neuropsychological testing, virtual reality and single cell recording to understand brain function and spatial cognition.

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Date	Speaker	Title
23.03.2021	**Somayeh Dodge, Ass. Prof**. Assistant Professor of Spatial Data Scienc *University of California, Santa Barbara* More…	Taking a human-centered data science approach to study movement

Abstract

Movement patterns are the results of complex behaviors and processes which drive individuals' movement in social and ecological systems. These patterns shape urban and natural ecosystem dynamics, structure human and wildlife social networks, and are instrumental to understanding human and wildlife interactions. Ubiquitous tracking and the increasing access to movement data in both trajectory forms and aggregate flows have generated a tremendous interest in data-driven approaches to mining movement patterns and learning about individuals' space use and interactions in space and time. To develop meaningful behavioral insights, it is important to take a human-centered data science approach and integrate domain knowledge in data-driven movement analytics through interdisciplinary research. With a focus on human mobility and movement ecology applications, in this presentation I review my recent collaborative work to develop cross-domain solutions to use movement as a marker to study and understand individuals' behavior and their interactions.

Bio

Somayeh Dodge serves as Assistant Professor of Spatial Data Science and leads the MOVE Laboratory in the Department of Geography at the University of California, Santa Barbara. She received her PhD in Geography with a specialization in Geographic Information Science (GIScience) from the University of Zurich, Switzerland in 2011. She holds a MS degree in GIS Engineering and a BS degree in Geomatics Engineering from the KNT University of Technology, Iran. Somayeh's research focuses on developing data analytics, knowledge discovery, modeling, and visualization techniques to study movement in human and ecological systems. She has published in a number of high-ranked international journals such as *Methods in Ecology and Evolution*, *International Journal of Geographic Information Science*, *Philosophical Transactions of the Royal Society B*, *Journal of Spatial Information Science (JOSIS)*, *Movement Ecology*, *Computers, Environment and Urban Systems (CEUS)*, *Geographical Analysis*, and *Information Visualization*. Somayeh currently serves as the Co-Editor in Chief of the *JOSIS* as well as on the editorial board of multiple journals including *Geographical Analysis*, *Cartography and Geographic Information Science*, *CEUS*, *Journal of Location Based Services*, and *The Professional Geographer*.

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Date	Speaker	Title
13.04.2021	**Dr. Clio Andris, Ass. Prof.** Assistant Professor of City & Regional Planning and Interactive Computing *Georgia Institute of Technology, Atlanta* More…	Introduction to Geographic Social Network Analysis and a Case Study of the American Mafia

Abstract

Personal relationships are ubiquitous and important in our lives, but rarely mapped and analyzed as GIS data. The goal of this talk is to describe interpersonal social network data structures and methods for embedding spatial social networks (SSNs) in geographic space. It will describe new and existing metrics for describing SSNs and a cutting-edge research agenda for SSN spatial models.

Bio

Dr. Clio Andris is an assistant professor in the School of City and Regional Planning and the School of Interactive Computing at Georgia Institute of Technology, in Atlanta, Georgia, U.S.A. in the field of Urban Analytics. Her research is on mathematical models of social networks, social flows, and interpersonal relationships in geographic space, applied to issues of urban planning, visualization, transportation, and geography. At Georgia Tech, she directs the Friendly Cities Lab: data-driven love for community. She received her PhD from MIT in Urban Information Systems where she was an NDSEG fellow and member of the Senseable City Lab. She was formerly a postdoctoral fellow at the Santa Fe Institute.

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Date	Speaker	Title
27.04.2021	**Daniel Arribas-Bel, PhD** Senior Lecturer in Geographic Data Science *University of Liverpool, UK* More…	Infusing our understanding of cities with Geographic Data Science

Abstract

In this talk, we'll introduce the notion of Geographic Data Science (GDS) as a cross-fertilisation space between Geography, GIS and Data Science. The recent explosion in availability of new forms of data poses significant opportunities to how we analyse cities. This presentation will walk through several examples where new forms of data are applied to tackle new questions or obtain new perspectives on long-standing challenges of regional andurban analysis. As part of this whirlwind tour, we will also spend some time trying to understand what the main challenges, methodological advances, and risks that "accidental data" pose are, and will emphasise the opportunities they unleash.

Bio

Dani Arribas-Bel is interested in computers, cities, and data. He is a senior lecturer in Geographic Data Science at the Department of Geography and Planning of the University of Liverpool. He is member of the development team of PySAL, the Python library for spatial analysis, and currently serves as co-editor of the journal "Environment and Planning B - Urban Analytics & City Science" and the "Journal of the Royal Statistical Society Series A - Statistics in Society", and chairs the Quantitative Methods Research Group of the Royal Geographical Society.

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Date	Speaker	Title
11.05.2021	**Song Gao, Ass. Prof**. Assistant Professor, Geospatial *University of Wisconsin, Madison* More…	GeoAI for Human Mobility Analytics

Abstract
We have witnessed recent advances in Geospatial Artificial Intelligence (GeoAI), which is the integration of geospatial technologies and AI, especially using machine learning and deep learning methods for geographic knowledge discovery and beyond. The increasing location-based services have generated large-scale individual-level trajectory data through mobile phone tracking, wearable sensors, GPS devices, and social media. Those trajectory big data provide new opportunities to study multiscale human mobility patterns and human-environment interactions. It also introduces grand challenges regarding the protection of geoprivacy and broader behavioral, social and ethical implications. In this talk, I will present our latest research efforts on human mobility analytics and protecting user location privacy using various GeoAI approaches (e.g., using recurrent neural networks, generative adversarial networks, and graph convolutional networks).

Bio
Dr. Song Gao is an Assistant Professor in Geographic Information Science at the University of Wisconsin-Madison, where he leads the Geospatial Data Science Lab. He holds a Ph.D. degree in Geography at the University of California-Santa Barbara. His main research interests include Place-Based GIS, GeoAI and Human Mobility. He is the (co-)author of 50+ peer-reviewed journal articles with 3000+ Google Scholar citations. He is the principal investigator of multiple research grants from U.S. National Science Foundation, Wisconsin Alumni Research Foundation, Microsoft AI for Earth, etc. He serves as the Associate Editor of Annals of GIS, Editorial Board Members of Scientific Reports, PloS One, Cartography and Geographic Information Science (CaGIS), and guest editor for International Journal of Geographical Information Science (IJGIS), Dr. Gao is the current Board Member of Director at the AAG Specialty Group in Geographic Information Science and Systems.

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Date	Speaker	Title
25.05.2021	**Rachel Franklin, Prof.** Spatial Analytics and Modelling Centre for Urban and Regional Development Studies (CURDS) School of Geography, Politics and Sociology *Newcastle University, UK* More…	Sensor Placement, Inequality, and Informed Decision Making in the Smart City

Abstract

Much attention is given to fairness and equity in the smart city, whether algorithmic bias, surveillance or socio-economic inclusion. This talk directs attention to an explicitly spatial component of the smart city apparatus: sensor networks and the emergence of coverage gaps—or sensor deserts. How are cities and other stakeholders to make decisions about placement and where does coverage of vulnerable groups and places fit in? The talk provides a conceptual overview of the sensor location-spatial inequality dilemma, gives a case study example from Newcastle upon Tyne in the United Kingdom, and concludes with some thoughts for both researchers and those on the ground working with smart city sensor networks, including local governments, policymakers, and community groups.

Bio

Rachel Franklin is professor of geographical analysis at the Centre for Urban and Regional Development Studies (CURDS) at Newcastle University in the United Kingdom. She is also a visiting scholar at the Population Studies and Training Center at Brown University, a Fellow of the Alan Turing Institute, and current editor of Geographical Analysis. Her research focus is in spatial demography and the interplay between spatial analytics and demographic change, in particular quantifying patterns, sources and impacts of spatial inequality.

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