




GIScience-Colloquium

Tuesday 16:15 / Room Y25 H92

*For attending, please follow the rules for a Covid-certificate



Date		Speaker	Title
21.09.2021	<i>MSc Concept Talk</i> 	Bracher Jana UZH GIVA*	Visualizing and communicating uncertainty in the context of spatial decision-making: The case of uncertainty depiction in debris flow risk assessment.
		Sturzenegger Florian UZH GIVA*	Design und Darstellung von Landschaftsmerkmalen in der Fahrradnavigation in Bezug auf Lernprozess und Lernfähigkeit der geplanten Route
05.10.2021	<i>MSc Concept Talk</i> 	Schmidheiny Nicolas UZH GIVA*	Mental Health Mapping using Big Data - A Spatio-Temporal Analysis of Emotions in Switzerland based on Twitter Data
		Fellmann Ursula UZH GIS*	Red Deer in the Swiss National Park: Space Utilization and Autumn Migration
12.10.2021		Schöning Johannes, Prof. Human-Computer Interaction, HCI <i>University of St. Gallen</i> More...	It's Time to Stop Staring at your Mobile Map App: The Importance of HCI Perspectives for Next-generation Navigation Devices
02.11.2021		Anikó Hannák, Prof. Social Computing Group Department of Informatics <i>University of Zurich</i> More...	New Faces of Bias in Online Labor Markets
16.11.2021		Wegner Jan Dirk, Prof. Institute for Computational Science <i>University Zurich</i> More...	Bayesian deep learning for estimating vegetation parameters using remote sensing



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Date	Speaker	Title
23.11.2021	 Wunderlich Anna Department of Psychology and Ergonomics <i>TU Berlin</i> More...	Landmark-based navigation instructions improve incidental spatial knowledge acquisition in real-world environments - a neuroscientific perspective
07.12.2021	<i>PhD Concept Talk</i> Balmer Michael	tbd
14.12.2021	 Yang Lipin, Ass. Prof. GIScience and Computer Science Department of Geography and Environmental Studies <i>University of New Mexico</i> More...	Advancing GIScience and Remote Sensing Using GeoAI and Geovisualization



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Date	Speaker	Title
12.10.2021	 <p>Schöning Johannes, Prof. Human-Computer Interaction, HCI <i>University of St. Gallen</i> More...</p>	It's Time to Stop Staring at your Mobile Map App: The Importance of HCI Perspectives for Next-generation Navigation Devices

Abstract

In my talk, I give a broad overview of my research. My research interests lie at the intersection of human-computer interaction (HCI), geographic information science and ubiquitous interface technologies. Our lab investigates how people interact with digital spatial information and create new methods and novel interfaces to help people interact with spatial information. With our research, we want to empower individuals and communities with the information they need to make better data-driven decisions by developing novel user interfaces with them. Our research mission is to fit human and technological needs and empower users when using novel interfaces. We want to gain a deeper understanding of the interplay between rapidly advancing technologies and how digital interfaces can empower users in their rich set of activities. We focus on a broad range of use cases from geographic information science, public health and medical contexts, as well as extreme conditions such as space missions. Examples will include catastrophic incidents associated with GPS devices, and other personal navigation technologies are all too common; the impact of optimizing routes for criteria other than simple travel time, e.g., identifying the “simplest route”, the “safest route”, or “most beautiful” route and novel routing approaches for Cyclist.

Bio

I am a professor of computer science at the University of St. Gallen in Switzerland, where I lead the Human-Computer Interaction (HCI) group. Before my time in Switzerland, I founded the HCI research group at the University of Bremen as a professor supported by the Lichtenberg programme of the Volkswagen Foundation. During my time in Bremen, I was director of the Bremen Spatial Cognition Center (BSCC) and member of the TZI (Center for Computing Technologies) and ZARM (Center of Applied Space Technology and Microgravity). Before and coming to Bremen, I was a visiting lecturer at UCL, UK, helping set up the Intel Collaborative Research Institute for Sustainable Cities and had a faculty position at Hasselt University, Belgium. I am also currently a visiting professor at the Madeira Interactive Technologies Institute (M-ITI), Portugal. Previously, I worked in Saarbrücken, where I was a senior consultant at the German Research Centre for Artificial Intelligence (DFKI). During my time at DFKI, I received a PhD in computer science at Saarland University (2010), supported by the Deutsche Telekom Labs in Berlin. I obtained my Master's degree in Geoinformatics at the University of Münster at the Institute for Geoinformatics (2007).

www.johannesschoening.de

Date: Tuesday, October 12 2021

Time: 16:15 – 17:30


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Date	Speaker	Title
02.11.2021	 Anikó Hannák, Prof. Social Computing Group Department of Informatics <i>University of Zurich</i> More...	Bayesian deep learning for estimating vegetation parameters using remote sensing

Abstract

tbd

Bio

tbd

Date: Tuesday, November 2, 2021

Time: 16:15 – 17:30


Room: Y25 H92



GIScience-Colloquium

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Date	Speaker	Title
16.11.2021		<p>Wegner Jan Dirk, Prof. Institute for Computational Science University Zurich More...</p> <p>Bayesian deep learning for estimating vegetation parameters using remote sensing</p>

Abstract

A multitude of different remote sensing sensors is acquiring massive amounts of geo-coded data with different spatial resolution, temporal frequency, modality, and quality every day. Data-driven approaches, especially modern deep learning, provide a promising way to learn accurate models directly from such heterogeneous data. For many applications in the environmental and geosciences, accurate model predictions are not enough but well-calibrated uncertainty estimates along with model outputs are essential, too. In this talk, I will present deep learning methods along with techniques to estimate well-calibrated uncertainties for estimating vegetation parameters at large scale from remote sensing data. I will explain how so-called Bayesian deep learning can help to combine satellite imagery of ESA's Sentinel mission with NASA GEDI data to estimate vegetation height (and further vegetation parameters) at 10 meter resolution with high temporal frequency.

Bio

Jan Dirk Wegner holds the "Data Science for Sciences" chair at the Institute for Computational Science, University of Zurich, as an Associate Professor and is head of the EcoVision Lab at ETH Zurich. Jan was PostDoc (2012-2016) and senior scientist (2017-2020) in the Photogrammetry and Remote Sensing group at ETH Zurich after completing his PhD (with distinction) at Leibniz Universität Hannover in 2011. His main research interests are at the frontier of machine learning, computer vision and remote sensing to solve ecological questions. Jan was granted multiple awards, among others an ETH Postdoctoral fellowship and the science award of the German Geodetic Commission. He was selected for the WEF Young Scientist Class 2020 as one of the 25 best researchers world-wide under the age of 40 committed to integrating scientific knowledge into society for the public good. Jan is vice-president of ISPRS Technical Commission II, chair of ISPRS II/WG 6 "Large-scale machine learning for geospatial data analysis", and director of the PhD graduate school "Data Science" at University of Zurich. Together with colleagues, he is organizer and chair of the CVPR EarthVision workshops.

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Date

Speaker

Title

23.11.2021



Wunderlich Anna

Department of Psychology and
Ergonomics, Berlin Mobile
Brain/Body Imaging Lab
(BeMoBIL)

Technische Universität Berlin

[More...](#)

Landmark-based navigation instructions
improve incidental spatial knowledge
acquisition in real-world environments - a
neuroscientific perspective

Abstract

Safe and successful navigating is supported by navigation assistant systems. However, the frequent use of turn-by-turn navigation instructions in daily life changes the way we process our environment. In particular, the processing of the spatial features is reduced. Pointing out landmarks in auditory navigation instructions had been shown to foster incidental spatial learning while keeping subjective mental load at a comparable level.

Firstly, this approach was further refined and modified in a virtual driving experiment to investigate the replicability and the long-term endurance of the incidentally acquired landmark and route knowledge.

Secondly, the ecological validity was tested in two more realistic setups. Landmark-based navigation instructions were provided to participants watching an interactive video in a pedestrians' perspective of real-world navigation (visual realism) or were actually navigating as pedestrians through real-world themselves (fully mobile and realistic setting). Performance measures in spatial tasks and blink-related brain activity during real-world assisted navigation revealed that incidental spatial knowledge acquisition was consistently enhanced for the group receiving landmark-based compared to standard navigation instructions.

To sum up, including landmark information in auditory navigation instructions enables to keep the advantages of navigation aids while allocating the users attention again to the relevant spatial features of the environment.

Bio

After a Bachelor of Science in Sensor Technology and Cognitive Psychology at University of Technology Chemnitz and a Masters' degree in Human Factors at Technische Universität Berlin, I focussed on the neuroergonomics of navigation assistance systems and spatial cognition. Currently, I finalize my PhD about the neuronal correlates of incidental spatial learning during the use of navigation aids supervised by Prof. Klaus Gramann.

Alongside my PhD, I am involved in collaborations targeting navigation aids and spatial knowledge acquisition with the University of Zürich and the University of Technology Sydney.

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Date

Speaker

Title

14.12.2021



Yang Lipin, Ass. Prof.

GIScience and Computer Science
Department of Geography and
Environmental Studies
University of New Mexico

[More...](#)

Advancing GIScience and Remote Sensing
Using GeoAI and Geovisualization

Abstract

The world we live in is data rich but information and knowledge poor. (Geospatial) big data is everywhere, but many challenges remain when dealing with (geospatial) big data. Apparently, processing such a huge volume of data is beyond human capabilities and so are machines. Because without intelligent algorithms, methods and computation frameworks, machines are blind to big data. These big data can be used to extract actionable insights where GeoAI and Geovisualization will shine. In this talk, I will present how GeoAI and geovisualization can be used to solve some GIS and RS challenges with 2-3 examples, such as automatic extraction of Antarctic ice sheet fracture lines.

Bio

Dr. Liping Yang is an Assistant Professor of Geographic Information Science (GIScience) and Computer Science, with a research focus on geospatial artificial intelligence (GeoAI), at University of New Mexico (UNM). Dr Yang directs the Geospatial Artificial Intelligence Research and Visualization Laboratory (GeoAIR Lab). She is also a faculty member in the Center for the Advancement of Spatial Informatics Research and Education (ASPIRE) at UNM. Dr. Yang is an expert in big data analytics research in GIScience and Data Science using data mining, computer vision, machine learning and deep learning, plus (geo) visual analytics. Dr. Yang was a postdoctoral research associate in the Information Sciences group at Los Alamos National Laboratory (LANL), focusing on computer vision and machine learning algorithm development for technical diagram image analysis. Before joining LANL, she was a postdoc researcher on geospatial big data mining and geovisualization in the GeoVISTA Center at Penn State University. Dr. Yang has worked many years at the intersection of GIScience, Computer Science, and Mathematics. Her multidisciplinary background on GIScience, graph theory, computational geometry, and machine learning provides her with a solid foundation to develop creative and novel solutions to advance machine vision and GIScience.

Date: Tuesday, December 14, 2021

Time: 16:15 – 17:30

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