GIScience-Colloquium (GIS/GIVA/GCO)

Programme Spring Semester 2024
Tuesday 16:15

9 April | Room Y25 H-79
Investigating sustainable mobility and urban development with big data and open source tools
Dr Henrikki Tenkanen
Assistant Professor of Geoinformation Technology
Department of Built Environment
Aalto University, Finland

30 April | Room Y25 H-79
Modelling of landscape aesthetic values in mountain regions
Prof. Dr. Uta Schirpke
Professor of Physical Geography and Land-Atmosphere Coupling
LMU, Munich, Germany

21 May | Room Y25 H-79
Immersive Digital Twins: Transdisciplinary Perspectives
Prof. Dr Alexander Klippel
Professor of Laboratory of Geoinformation Science
and Remote Sensing
University & Research Wageningen,
The Netherlands

28 May | Room Y25 H-79
Empowering Communities: Unveiling the Potential of Place-Based Citizen Science
Dr. Ekaterina Egorova
Geographic Citizen Science Researcher, Faculty of Geo-Information Science and Earth Observation
University of Twente, The Netherlands

Dr Henrikki Tenkanen

Investigating sustainable mobility and urban development with big data and open source tools

Abstract
In this presentation, I will give an overview of our research at the intersection of GIScience, urban analytics and sustainable mobility. I will give particular attention to projects related to:

1) quantification of transport related carbon emissions in the Nordics at high spatial and temporal resolutions using big mobility data and computational models; and

2) socioeconomic and spatial inequalities in access to opportunities at national level in Finland with high spatial resolution; and

3) the interplay between urban planning, consumption and carbon emissions mixing various geospatial data sources and survey data.

At the end, I will discuss some of the advantages and limitations of these tools and models based on interviews conducted with Finnish planners, reflecting on new research avenues for using spatial data science for sustainable and inclusive cities.

Bio
Henrikki Tenkanen is a geographer and Assistant Professor of Geoinformation Technology at Aalto University. At Aalto, he leads the GIST Lab which is an interdisciplinary research group focusing on harnessing GIScience methods and modelling to better understand and address sustainability challenges. More specifically, the team focuses on big data analytics, spatial accessibility modelling, mobility research and urban planning. Henrikki is enthusiastic about open science and education and has contributed e.g. to the UNESCO's Recommendation on Open Science. He is an author of various open online courses targeted for geographers, as well as a forthcoming book Introduction to Python for Geographic Data Analysis. Henrikki also actively contributes to Python's geospatial ecosystem by being the maintainer of pyrosm and r5py libraries and a contributor to geopandas and OSMnx.

TUE 30 April at 16:15 | Room Y25 H-79
Prof. Dr Uta Schirpke

Modelling of landscape aesthetic values in mountain regions

Abstract
Mountain regions are highly appreciated for their appealing landscapes contributing to human well-being in terms of aesthetic and recreational experiences. To maintain such landscapes in the face of increasing global change pressures, spatially explicit information is needed to support landscape management and planning. However, quantifying and mapping landscape aesthetic values remains highly challenging due to their subjectivity. Here, a spatial modelling approach relating landscape characteristics to people's preferences via a regression model is presented. Landscape preferences were gathered through surveys using photo-based questionnaires with panoramic pictures representing major landscape types of the European Alps such as alpine grassland, forest, agriculturally used landscapes, and urbanised landscapes. Landscape indicators were calculated based on geo-data for each photo location accounting for topography and distance to the photo point. This modelling approach allows the estimation of landscape aesthetic values in spatial and qualitative terms for most viewpoints in the European Alps. The model can be applied for analysing impacts of landscape changes on aesthetic landscape values, and the resulting maps can be used as a discussion basis supporting the decision-making process.

Bio
Uta Schirpke is a senior researcher at the Institute for Alpine Environment at Eurac Research in Bozen/Bolzano (Italy). She has a background in physical geography (LMU Munich) and landscape ecology (PhD and habilitation at the University Innsbruck, Austria). She aims at assessing human-nature relationships and interactions focusing on mountain socio-ecological systems. She has strong expertise in modelling ecosystem services, analysing spatial patterns, and assessing the effects of global change on ecosystem services bridging socioeconomic and ecological sciences.

WED 13 March at 12:00 | Room Y25 H-79
Dr Mona Bartling

Designing context-aware mobile maps

Abstract: Mobile maps are an integral part of our daily routines, serving a variety of purposes in different environments. Since the activities and environments in which we use maps are diverse, adjusting the map design to suit the specific map use situation (i.e., map use context) is essential for providing appropriate maps. The evaluation of map use context is therefore crucial for a user-centered design of maps and for determining how aspects of map designs should adapt or vary between different map use contexts. For example, when using a mobile map while driving a car, the design should prioritize relevant wayfinding information and minimize distractions. However, in the same scenario, if the person has a color-vision impairment, the map design should present the information in an appropriate format, such as by increasing contrast or selecting color schemes and symbologies appropriate for the impairment.

In this talk, I will provide an overview of my research on context-aware mobile maps. I will explore methods for modeling and evaluating context and discuss empirical research for understanding how users' map interactions are influenced by different contexts.