Urban mobility justice in the era of data, algorithms, and AI

Summary

This doctoral project investigates urban mobility justice in the context of growing reliance on data, algorithms, and AI in city planning and transport governance. It explores how data-based technologies reshape access, participation, and equity in mobility systems. The research brings together perspectives from mobility justice, critical data studies, computational social science, and urban governance to examine both opportunities and risks of algorithmic decision-making. Combining theoretical analysis with empirical case studies, the project aims to develop a framework for understanding and assessing justice in datafied, increasingly automated, and AI-based urban mobility systems.

Research field:	Public policy and innovation
Supervisor:	Prof. Dr. Anu Masso
Availability:	This position is available.
Offered by:	School of Business and Governance Ragnar Nurkse Department of Innovation and Governance
Application deadline:	Applications are accepted between June 01, 2025 00:00 and June 30, 2025 23:59 (Europe/Zurich)

Description

The research

As digitalisation and automation reshape urban transport systems, cities across Europe are increasingly adopting data-driven tools and AI-based technologies to optimise traffic flows, manage micromobility platforms, and guide infrastructure planning. While these developments promise efficiency and sustainability, they also raise important questions about fairness, accessibility, and inclusion. How are decisions about mobility infrastructure made? Whose data is collected, and whose mobility needs are prioritised? What does justice mean in algorithmically managed urban transport systems?

This PhD project investigates the concept of *mobility justice* in the era of datafication and AI. Its goal is to develop a theoretical and methodological framework for understanding and evaluating justice in data-mediated urban mobility, combining critical theory with empirical research. The project draws on concepts from critical data studies, governance, and mobilities research to study how social values such as equity, transparency, and participation are negotiated in AI-based urban mobility systems.

The thesis should address the following questions: 1) What social, political, and ethical challenges arise in the design and implementation of AI-based urban mobility? 2) How do different urban contexts shape the interpretation and application of justice in mobility systems? 3) What frameworks and governance models can support more inclusive and just mobility futures?

Responsibilities and (foreseen) tasks

- Develop a conceptual and analytical framework to assess mobility justice in data-based and AI-supported urban environments
- Apply comparative and computational methods (e.g. latent variable detection, clustering, machine learning, spatial modelling) using R and/or Python for mobility-related data analysis
- Analyse cognitive and behavioural data, including eye-tracking and other sensor-based data, to understand user experience and perceptions
- Integrate large-scale datasets (e.g. survey and eye-tracking platform data to examine patterns and variations of perceptions of mobility justice across cities
- Collaborate with interdisciplinary teams in data science, urban studies, and public policy
- Present research findings through publications, conferences, and engagement with policy stakeholders and civil society

Applicants should fulfil the following requirements:

- a master’s degree in social sciences

- excellent methodological skills, including experience in computational social science and empirical research.
- a clear interest in the topic of the position
- excellent command of English
- strong and demonstrable writing and analytical skills
- capacity to work both as an independent researcher and as part of an international team
- capacity and willingness to provide assistance in organizational tasks relevant to the project

The candidate should submit a research plan for the topic, including the overall research and data collection strategy. The candidate can expand on the listed research questions and tasks, and propose theoretical lenses to be used.

We offer:

- 4-year PhD position in one of the largest, most internationalized and leading social science research centers in Estonia with a large portfolio of ongoing pan-European and national public administration, digital governance and innovation studies projects
- The chance to do high-level research in one of the most dynamic digital government contexts globally
- Opportunities for conference visits, research stays and networking with globally leading universities and research centers in the fields of public administration, innovation studies and digital government

About the department

The Ragnar Nurkse Department of Innovation and Governance (RND) is an interdisciplinary research center of Tallinn University of Technology that focuses on socially relevant and future-oriented research and teaching issues:

- e-governance and digital transformation of societies: datafication, public services and state-citizen relations in the digital era, smart cities and digital public services and cross-border collaboration
- models and practices of governance and public administration globally
- fiscal governance and fiscal bureaucracies
- P2P technologies, its' governance and potential new production models
- science and innovation policies and its' management
- philosophy and ethics of science and technology.

RND is a highly internationalised department and engages some of the top international thinkers and researchers in its research fields. Next to a fully English taught PhD degree it offers a MA degree in Technology Governance and Digital Transformations, and a unique Erasmus Mundus joint MSc programme in Public Sector Innovation and e-Governance in cooperation with KU Leuven (Belgium) and University of Münster (Germany). RND and its staff have coordinated or been involved in a multitude of international research projects with the EU (INTERREG, COST, FP7, H2020), UN (UNDP), OECD (SIGMA), INET, and have participated in various European Commission working groups (the EU's Lisbon Agenda Group, Expert Group on Managing Risks in Public Technology Procurement, Expert Group on Public Sector Innovation). Recently RND initiated a major, 32 MEUR international R&D project on Smart Cities (FinestTwins). RND is also engaged in several international associations, such as the European Master in Public Administration program (EMPA), European Inter-University Association on Society, Science and Technology (ESST), and the European Group for Public Administration (EGPA) where RND coordinates the Permanent Study Group on Public Administration, Technology and Innovation.

(Additional information)

For further information, please contact Associate Professor Anu Masso anu.masso@taltech.ee or visit https://www.taltech.ee/en/nurkse

To get more information or to apply online, visit https://taltech.glowbase.com/positions/1010 or scan the the code on the left with your smartphone.