

# Smart city urban economics and urban design: guiding of complex processes

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## Summary

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*TalTech Academy of Architecture and Urban Studies opens a PhD position in a research project concerning future urban technology mediated cities. The cooperative project is established by TalTech, City of Tallinn and several private sector partners. The aim of the project is to suggest data-based solutions to analyze and guide built environment, mobility and service development related to various aspects of the 'smart' future city. Under the topic 'Smart city urban economics and urban design: guiding of complex processes', the PhD candidate will study anticipated changes in work and resulting transitions in urban economic landscape and its key actors, emerging spatial logics and methods to guide the urban socio-economic systems towards preferable goals.*

Research field:	Building and civil engineering and architecture
Supervisor:	Jenni Vilhelmiina Partanen
Availability:	This position is available.
Offered by:	School of Engineering Department of Civil Engineering and Architecture
Application deadline:	Applications are accepted between June 01, 2020 00:00 and July 03, 2020 23:59 (Europe/Zurich)

## Description

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Cities are in a flux: Urban complex spatio-functional system, mobility and urban economics are evolving drastically due to rapid progress and innovations in energy, ICT and other fields of technology, along with life-style changes resulting from these. While the role of corporeal urban environment will retain, it will transform. Urban transformation is intertwined with emerging phenomena such as virtuality and autonomous transport guided by AI and enabled by extremely fast telecommunication connections. However, technology is not only a driver of change, but it also provides tools and methods for better understanding and guiding it. Approaches from data analytics to simulation and machine learning are required to respond to emerging challenges in urbanity, reflected against credible future visions. For uncertainty of the future, making the city becomes crucial, along with new tools and methods of urban planning and design. The research in this position will focus on the ongoing qualitative transition of urban systems towards 'smart' urbanity, along with transforming economic and production landscape and its spatial and morphological manifestations. The crucial issues to be studied could be e.g. the future key industries and actors in the emerging techno-urbanity; their preferences and logics regarding the location decisions in urban regions; the impact of these choices to future urban economic geography; or the role of geographic and other types of proximities in the era of virtual, multi-location work.

### Responsibilities and tasks

Based on relevant literature, the PhD candidate will build plausible scenarios concerning new work and its implications to mobility, urban spatial configurations and way of life applying statistical and spatial analyses methods. The candidate will suggest potential future key industries and actors in urban economics, and carry out empirical research such as surveys and/or interviews to explore e.g. their location preferences and operational logics in urban environment. In the project, the PhD candidate will be responsible for data gathering, processing and analyzing, and for organizing necessary research operations such as interviews or surveys. The candidate will reflect the results against relevant economic and urban theories to produce a coherent understanding of potential of urban planning and governance in managing the becoming processes of new work. The candidate will publish and present the work in seminars, conferences and lectures in Academia and to the stakeholders.

### Qualifications

The applicants should fulfill the following requirements:

- University degree (M.Sc.) in urban design, urban planning, architecture or architectural engineering. Consideration will be given to applicants whose previous degrees are in related disciplines in urban studies. We encourage applications from candidates engaged with urban economics, quantitative methods and/or Geographic Information Systems (GIS). Prior contribution or interests related to complex adaptive systems (CAS) are appreciated.



- The candidate must have ability to carry out independent research and work as a part of the team, and have interest in the presentation and publication of scientific results.
- The Academy is international in focus, and good oral and written skills in English are required.

The post is a fully funded position for 4 years. The candidate is expected to work full time as a part of a research team located at the Academy of Architecture and Urban Studies building in Tõnismägi, Tallinn city center. The candidate is obligated to participate and fulfil the requirements of Tallinn University of Technology PhD program. Additional funds will be provided for conferences and other research expenses.

A of A strives to be an inclusive workplace offering equal opportunities, attracting qualified candidates contributing to the Unit's excellence and diversity. We welcome applications from all sections of the community and from people of all backgrounds.



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