



PostDoc in innovative urban mobility solutions

General description

Budapest University of Technology Economics (BME) was founded in 1782, and is one of the largest higher educational institutions in the field of engineering in Central Europe with about 24.000 students and 1200 teachers and researchers. The university holds an international reputation for excellence in engineering.

The Faculty of Transportation Engineering and Vehicle Engineering aims to be the scientific center in the fields of transportation engineering, vehicle engineering and logistics engineering. The Faculty's mission defines the undertaking of high level of scientific activity, research and development, offering expertise and consultation to transport and vehicle industry companies, the logistics services sector and to industrial policy makers.

The Department of Transport Technology and Economics has been carrying out research and education in the interdisciplinary fields of transportation engineering and economics for about 60 years, focusing on research topics, such as strategic and operative planning, operation and management, decision support in transport, evaluation and control of transport networks, analysis of passenger transport processes, taking into account the aspects of transport safety and sustainability.

More information about ongoing research projects and general research topics may be found on the website of the faculty: www.transportation.bme.hu

Job description

Budapest University of Technology and Economics (BME) introduces a new research program to create groups of excellence in the field of Artificial Intelligence for Smart Cities and Autonomous Vehicles. Within this program several research groups will be created, one of them focusing on Innovative Urban Mobility Solutions.

In this research group young researchers will be gathered, who are enthusiastic and open for new challenges. The ultimate aim is to create a strong research community in Budapest and work on novel methods, innovative solutions and useful applications.

Within the research group the applicant should further **develop an activity based model including electric vehicles and charging stations**. The applicant will have the following tasks, which may be further extended based on the requirements of the research topic:

- review the relevant literature and similar optimization methods,
- create a utility function for the optimization of daily activities,
- extend existing optimization algorithm with electric vehicles and charging stations,
- compare different optimization methods with the developed algorithm,
- support the development of an application based on the optimization algorithm.

The topic can be customized to a limited extent based on the research interest of the applicant, but it has to correspond to the aims of the general program.





Requirements

Applicants should have the following qualifications:

- PhD in Transportation Engineering, Electrical Engineering, Civil Engineering or other relevant interdisciplinary fields,
- Solid background in transportation systems, database systems, modeling, evaluation methods, statistical methods, heuristic algorithms and optimization algorithms,
- Programming skills and experience is preferred,
- Experience in conducting individual research, writing scientific papers, creating research reports and holding presentations,
- Excellent oral and written communication skills in English,
- Willingness and ability to work individually on the chosen research topic.

Applicants should fulfill the following tasks:

- Working individually on the chosen research topic with high efficiency,
- Writing research reports about the progress regularly,
- Writing and presenting two conference papers per year,
- Writing one research paper accepted in a peer-reviewed high ranked international journal with Impact Factor per year,
- Supporting teaching activities and updating course materials in the relevant fields,
- Supporting project activities, workshops and locally organized conferences.

Applicants need to send the following documents:

- updated CV (max 2 pages),
- one reference from a professor (max 1 page),
- description of previous research activities (max 2 pages),
- proposed work plan (max 1 page),
- motivation letter (max 1 page),
- list of publications.

Offer

The salary will be comparable to the European average standards, considering that every day life in Hungary is much cheaper than in Western Europe. However besides the salary no other extra allowance is provided (e.g. accommodation, medical insurance). The location of the workplace is in the campus of Budapest University of Technology Economics (BME). The required research infrastructure is provided and flexible work schedule can be arranged.

First a one year contract is offered, which could be extended with another 2 years (and possibly even after).

Applications should be sent until the 25th of May 2018 to the following e-mail address: transportation@mail.bme.hu. The applicants may be asked to present their previous research activities, proposed work plan and motivation within the frame of a Skype interview in a bilaterally agreed time.

Decision will be made until the 10th of June 2018.

