Singapore-MIT Alliance for Research and Technology Centre

SMART is a major research enterprise established by the Massachusetts Institute of Technology (MIT) in partnership with the National Research Foundation of Singapore (NRF). SMART serves as an intellectual hub for international research collaborations, not only between MIT and Singapore, but also involving researchers from the region and beyond. At SMART, we identify and carry out research on critical problems of societal importance. SMART is a magnet attracting and anchoring global research talent, while simultaneously instilling and promoting a culture of translational research and entrepreneurship in Singapore. Five interdisciplinary research groups (IRGs) have been established to date: BioSystems and Micromechanics (BioSym), Centre for Environmental Sensing and Modeling (CENSAM), Future Urban Mobility (FM), Infectious Diseases (ID) and Low Energy Electronic Systems (LEES)

Research Scientist and Postdoctoral Associate: Simulation of Urban Mobility with Autonomous Vehicles Systems
Future Urban Mobility Interdisciplinary Research Group

Project Overview:
Development and application of innovative and comprehensive urban mobility simulations with autonomous vehicle systems and application to Singapore. Work includes the development of behavioural models, behavioural data collection using smartphone technology, testing of innovative demand responsive mobility services, and further development and application of SimMobility, an advanced agent-based simulation framework that integrates operational and behavioural models.

An integrated platform with multiple scenario assessment will be developed in order to analyse innovative autonomous solutions and provide insights about the benefits and issues in implementing autonomous vehicle services in Singapore.

Job description:
The FM IRG has open positions for a research scientist and postdoctoral associate. Positions are based at the SMART Centre in Singapore. The job scope includes:

- Optimization of real-time (demand responsive) systems
- Implementing and validating these models in the context of a mobility simulator (SimMobility) as a team leader and potentially also as code developer;
- Exploring a variety of factors impacting individual mobility together with the SMART colleagues.
- Advanced research in any of these or related areas.

Requirements:
Ideal candidates will have excellent skills in optimization, transportation engineering or simulation and experience in programming and computer engineering. A strong record in subjects such as real-time optimization, microscopic traffic simulation or mathematics is sought.

Candidates should have the following:

- PhD in Optimization Research, Transportation or Computer Science;

- Experience with simulation, system optimization or automated/connected vehicle technologies;
- Good communication and programming skills.

Candidates with experience in any of the following areas will be strongly considered:

- Experience working with real-time systems;
- Familiarity with transportation research topics, such as demand modelling, travel surveys, vehicle motion simulation or energy estimation;
- Large scale (e.g. entire city) transport modelling
- Treatment of uncertainty

The position will be based at the SMART FM Offices on the campus of the National University of Singapore (NUS). Short travel to MIT for up to a few months is possible as part of the international research collaboration. The research scientist and postdoctoral associate will work with an integrated team of faculty, researchers and students from MIT and Singaporean University partners under the supervision of Professor Moshe Ben-Akiva. Other MIT faculty involved in the project are Professors Emilio Frazzoli, Li-Shiuan Peh, and Christopher Zegras.

Interested candidates should submit a cover letter summarizing experience and expertise, CV, and a list of references to:

kakali@smart.mit.edu

Additional Open Postdoctoral Associate Positions at SMART:

Postdoctoral Associate – Public Transport Modeling

http://smart.mit.edu/jobs-at-smart/current-open-positions/article/257-postdoctoral-associate--public-transport-modeling-.html

Postdoctoral Associate – Route Choice Models in Transportation Simulation

http://smart.mit.edu/jobs-at-smart/current-open-positions/article/258-postdoctoral-associate--route-choice-models-in-transport-simulation-.html

Postdoctoral Associate – SimMobility

http://smart.mit.edu/jobs-at-smart/current-open-positions/article/256-postdoctoral-associate--simmobility-.html