SMART is a major new 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).

Project Overview

A key research project ongoing at the Singapore-MIT Alliance for Research and Technology (SMART) in Singapore involves next-generation data collection and analysis as well as modelling freight movements and policies for urban freight and city logistics operations. Part of our research agenda is also related to the development of the SimMobility simulation platform that integrates and links together various mobility-sensitive behavioural models with state-of-the-art simulators to predict impacts of freight in the overall transportation system. The projects comprise of teams from both MIT, SMART, SUTD and local agencies in collaboration with several international research and industry partners.

Job description

The FM IRG is currently seeking to employ a postdoctoral associate, based at the SMART Centre in Singapore, to work on these components of our projects. The job scope is as follows:

- Design and implement the agent-based freight behavioural models, covering all relevant agents and their mutual interactions along supply chains.
- Make use of innovative data sets for freight model estimation.
- Work with other researchers and software engineers to integrate the above models in the existing modelling and software development effort.
- Supervise PhD students and other junior team members.
- Monitor the progress of the project, regularly meet with PIs.
- Scientific dissemination of new findings in journals/conferences.
Requirements:

In particular, we seek a candidate with the following skills:

- Ph.D. in Transportation, Supply Chain / Logistics, Civil Engineering, Systems Engineering, Computer Science or relevant domain.
- Domain knowledge in:
  - Transportation Network/Demand Modeling,
  - Freight / Logistics / Supply Chain Modeling,
- Independent and self-motivated, yet able to work as part of a multidisciplinary team.
- Excellent command of written English and oral presentation skills.
- Demonstrated ability to effectively manage concurrent technical tasks with competing priorities.
- Preference will be given to candidates with proven skills in any of the following:
  - Agent-based simulation
  - Discrete choice modelling
  - Programming/software development (C++, LUA, Python)
  - Machine learning, data analytics
  - Working with real-world data and real-world systems.

The position will be based at the SMART-FM IRG on the campus of the National University of Singapore (NUS). The Postdoctoral Associate will work with an integrated team of faculty, researchers and students from SMART, MIT and Singapore partners; Dr. André Romano Alho (SMART), Prof. Lynette Cheah (SUTD), Prof. Christopher Zegras (MIT) and Prof. Moshe Ben-Akiva (MIT).

To Apply

Interested applicants should send a cover letter expressing specific interest in the position and a detailed CV with information on education qualifications, work experience, list of publications, and citizenship status to andrew.tong@smart.mit.edu. The subject of your e-mail should be titled: Postdoctoral Associate – Freight Behavioural Models.

We regret that only shortlisted candidates will be notified.