

RESEARCH ASSOCIATE

Project Title: Traveler-centric incident management for public transport systems

TUM Create is doing research in planning, operation and infrastructure requirements for Semi-Rapid Transit Systems (SRT) in large megacities using Singapore as a case study.

We are looking for an applicant with strong analytical skills, background in transportation engineering and experiences in ITS and public transport simulation, especially with PTV VISSIM to join our research team. There is the possibility of pursuing a doctoral thesis within this thematic area (to be decided within the first year).

Project Description:

The aim of the research is to develop a decision support system to help mitigate impacts of operational disturbances and to improve individual travel choices for passengers during incidents such as train failures or crowding in large events. The re-routing will focus on passengers' journeys rather than public transport vehicles as in state of the art applications. This will include model-based methods for real-time evaluation of available alternatives and will rely highly on the merging of big data from the overall transport system. The research will develop real-time inter-modal re-routing strategies with respect to the decisions of the network operators. Upon this information basis, strategic and operational algorithms for incident management must be developed.

Requirements:

- Master's degree in *Civil engineering / Transportation engineering or equivalent* – theoretical knowledge and practical experience in microscopic traffic simulation; experience in transportation engineering, preferably in the fields of ITS for public transport.
- Knowledge of PTV VISSIM tool, Geographical information systems (QGIS, ArcGis) and of programming languages – Python, R, Matlab, or others – is an added advantage.
- Able to work in a multicultural environment.
- Willingness for several short-term work stays at TUM, Munich.
- Willingness to pursuing a doctoral thesis

Position is available immediately. Interested candidates should send their full applications via email, including a resume, academic transcripts and a cover letter to Dr. Andreas Rau (andreas.rau@tum-create.edu.sg). We thank all applicants for the interest, but only shortlisted candidates will be notified.



ABOUT TUM CREATE

We are developing cutting-edge technologies and transportation concepts for public transport to meet the growing transport and sustainability challenges in fast-growing megacities. Germany's Technische Universität München (TUM) and Singapore's Nanyang Technological University (NTU) — two world-leading engineering universities — have come together to collaborate on this ambitious joint research programme. It is funded by Singapore's National Research Foundation.