

RESEARCH ASSOCIATE

Project Title: Pro-active transport management for Semi-Rapid Transit Systems (SRT)

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 control as well as experiences in modeling and simulating intelligent private and public transport systems on a microscopic and mesoscopic scale. There is the possibility of pursuing a doctoral thesis within this thematic area (to be decided within the first year).

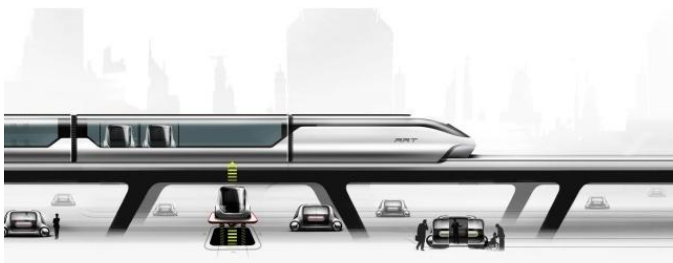
Project Description:

The overall objective of the research within this project is to develop strategic traffic management technologies that aim at an efficient adaptive use of the existing road infrastructure by both SRT and private transport, enabling an accelerated and reliable operation at stops and other facilities. Pro-active management measures for the use of road space (e.g. dynamic lane dedication, virtual right of way or ad-hoc platooning) shall be investigated. Additionally, related operational technologies and planning schemes for public transport acceleration shall be embedded into the pro-active management approach and be linked with basic elements, like stop design, boarding and alighting procedures. An important part of the overall approach is the integration of purpose designed new types of autonomous vehicles. Valid complete pro-active traffic management scenarios shall be defined, modeled and implemented in computer simulation. After assessment, draft deployment specifications shall be derived. A small scale pilot demonstration will be conducted in conjunction with the extensive simulation studies.

Requirements:

- Master's degree in *Civil engineering / Transportation engineering or equivalent* – theoretical knowledge and practical experience in traffic flow modeling and microscopic traffic simulation; experience in transportation engineering and control, 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.