

## Research Assistant / Master's Thesis

### Traffic Scenario Creation for Cloud-based Simulation Templating TUMCREATE, Singapore

Availability: Now

Contact: Daniel Zehe (Daniel.Zehe@tum-create.edu.sg)



### Background

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We have an open position for a master thesis student at **TUMCREATE in Singapore** with a background in Computer Science with a focus on simulation scenario creation and cloud computing.

### Objective & tasks

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TUMCREATE is researching into the Ultimate Public Transport System (UPTS) for Singapore based on autonomous mobility and enabling infrastructure. For this research, simulation scenarios need to be created and made accessible to non-domain expert. Therefore, the execution need to be cloud-based in order to reduce hardware requirements at the user's side as well as simplified. These simplified scenarios are called templates, since only a small number of variables are configurable.

The work on the master thesis project will be split into several parts. (1) Getting familiarized with CityMoS and agent-based mobility simulations as well as (2) defining problem and scenarios that are interesting to the domain experts with in the within the mobility-research domain. (3) Researching and eventually implementing models that are required, together with the domain expert. (4) Designing and developing a cloud infrastructure that can support the creation, execution, monitoring, as well as evaluation of these templated CityMoS scenarios will help to gain feedback from potential non-expert users.

Students applying for this master thesis project should have a basic understanding of agent-based simulations. An essential knowledge and understanding of mobility related problems in large cities is advantageous.

### What we expect from you

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- Bachelor Degree in Computer Science or Similar
- Object-oriented programming concepts
- Programming skills in C++(basic) and nodejs
- Proficient in at least one scripting language
- Comfortable with Linux, Git, LaTeX
- Ability to work independently
- Motivation to learn new topics
- Good communication skills

### What we offer you

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- An international and multidisciplinary working environment
- Opportunity to work on a project with real-life relevance

**Send your resume/CV to the contact person if interested**

**NOTE: Only shortlisted candidates will be contacted**

#### ABOUT TUMCREATE

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TUMCREATE is a research platform for the improvement of Singapore's public transportation, including the deployment of electric and autonomous mobility. Researchers from Technical University Munich and Nanyang Technological University join forces and are funded by Singapore's National Research Foundation as part of the Campus for Research Excellence And Technological Enterprise (CREATE).

TUMCREATE is made up of over 100 scientists, researchers and engineers led by Professors from the Technical University of Munich and Nanyang Technological University.