# Nagacharan Teja Tangirala

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## SUMMARY

I am looking for an exciting development role with C++, Rust, or Python. I am an Urban Mobility researcher with 8 years of Research and Development experience in studying electric mobility in a city through high-performance simulations built in C++ and Rust.

## EXPERIENCE

### Research Associate

**Technical University of Munich** **May 2021 - May 2024, Munich, Germany**

- Led a team of three researchers in a simulation-based study of cargo fleet electrification consisting of 150 trucks.
- Designed and implemented the electric truck fleet behavior in CityMoS (**C++**) traffic simulator.
- Supervised 12 student theses as part of their Bachelor's and Masters's courses.
- Prepared and submitted 5 research articles on Autonomous Fleets and Connected Vehicles simulations.
- PhD research in Connected Vehicles Simulations by building a new simulator called Disolv (**Rust)**.

### Research Engineer

**TUMCREATE** **December 2019 - May 2021, Singapore**

- Developed synthetic trip generation module (**Java**) capable of generating >1 million trips for CityMoS traffic simulator.
- Conceptualized and implemented a taxi model in CityMoS to support simulations of >100000 taxis and private hire vehicles.
- Analyzed the energy requirements of a taxi fleet in Singapore with varying electrification rates.
- Assisted in comparative analysis of traffic simulators MATSim, SimMobility, VISSIM and CityMoS.

### Research Engineer

**Nanyang Technological University (NTU), Singapore** **July 2017 - November 2019, Singapore**

- Implemented network simulation module to carry out truck platooning simulation with 1000 vehicles.
- Published an article on the impact of channel crowding and packet loss on the truck platooning performance.
- Modeled e-bikes in the mobility simulation and developed scenarios to model their interactions with pedestrians.
- Completed 2 individual research projects and assisted 3 projects led by the rest of the team.

### Software Engineer

**Accenture** **November 2013 - June 2015, Bengaluru, India**

- Saved 80% of the human time in multiple repetitive tasks through my automation solutions.
- Designated fixer of C++ and bash scripts tasks because of my familiarity with programming languages.
- Top performer award within a short period led to an early promotion with best remarks.

## SKILLS

**Programming**: Rust, C++, Python, Java

**Simulators**: CityMoS, Disolv, SUMO, MATLAB, ns-3, OMNeT++

## EDUCATION

### PhD (Ongoing)

Technical University of Munich (TUM) · Munich, Germany · 2026

- Ongoing PhD on AI applications in Connected Mobility simulations with 5G and Beyond.
- Developed an open-source simulator, Disolv, to assist my research. Check it out: https://github.com/nagacharan-tangirala/disolv

### Master of Science in Automation and Control

National University of Singapore (NUS) · Singapore, Singapore · 2016 · 3.75/5.0

- Published a research article on the study of a mobile robot navigation method.

### Bachelor of Engineering in Electrical and Electronics Engineering

SDM College of Engineering and Technology (SDMCET) · Dharwad, India · 2013 · 8.94/10

- Published a research article on simulation of controllers for AC Transmission.