Welcome to the C2SMART SUMO-Urban Traffic Simulation workshop. This workshop provides an entry-level introduction to the Simulation of Urban Mobility SUMO, an open-source, highly flexible microscopic simulation software, and teaches how to develop microscopic traffic simulation models under multiple urban scenarios. Also, python-based outsourcing simulation control will be included in the workshop, which could provide more opportunities to implement complex scenarios, such as dynamic traffic signal control or basic vehicle-to-vehicle/vehicle-to-infrastructure connections. Participants will get started quickly at SUMO by practicing real-world scenario analysis and development.

Instructor Information:
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Requirements: Basic Python Skills
Session Dates and Times: Friday 1 PM EST

Schedule:
Week 1: SUMO 101
- Concepts of SUMO.
- How does simulation run: A quick start.
- OSMWebWizard: 3-Click Scenario Generation.

Week 2: SUMO API – TraCI
- TraCI: The magic tool of implementing engineering ideas.
- Advanced SUMO: Text editor style.
- Example Scenario: Pedestrian signal with push-button.

Week 3: SUMO V2V/V2I Implementation
• Mechanism Design
• What tools do we need? How to search for tools to achieve our goal?
• Example Scenario: Queuing warning application.

Optional References:

• Official documents of SUMO: https://sumo.dlr.de/docs/index.html
• Useful Tutorials: https://sumo.dlr.de/docs/Tutorials.html
• Basic/Computer Skills: https://sumo.dlr.de/docs/Basics/Basic_Computer_Skills.html
• Introduction papers:

*Note: If you are a NYU student and is taking TR-GY 7353: Data Driven Mobility Modeling and Simulation course in Spring 2021, you may skip the first two sessions of this workshop.*