

Project Title: Parallel Traffic Simulation Load Balancing and Visualization

Project Description:

The project will focus on improving our existing parallel traffic simulator, QarSUMO, based on the popular open-source SUMO tool. Specifically, the summer intern needs to examine the load imbalance problem experienced with city traffic bursts, such as morning commute and large events, then proposes/enhances optimization algorithms to achieve better road network partitioning. Also we hope to investigate and mitigate the latency problem associated with visualizing large maps or heavy traffic with widely used tools such as Unity.

Project Type: Research

Internship Batch: Batch 1 (from May 7 to June 29)

Duties/Activities: The student will conduct performance examination, algorithm design/optimization, and final system evaluation.

Required Skills: C++, data structures, multi-threaded execution

Preferred Intern Academic Level: Undergraduate

Learning Opportunities: Production-level system design and optimization

Expected Team Size: 1

Mentors (to be co-mentored by Xiaosong and Sanjay)

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