Design and implementation of a streaming middleware for vehicular networks simulators

Motivation

Smart vehicles (and smart vehicular networks) are key research and industrial topics. One of the main challenges in the designing of applications tailored to smart vehicles and smart vehicular networks is their testing and evaluation, as the latter cannot be conducted on the real systems (both because of security and cost reasons). Because of this, advanced simulators have a key role in this context. This thesis aims at the design and implementation of a middleware layer that can bridge modern simulators with online data processing frameworks (e.g., Apache Storm or Apache Spark) by providing geo-localized data and simulation of distributed delivery of data.

Challenge

This thesis targets (i) the study of the appropriateness of existing vehicular networks simulators, the (ii) design and implementation of the middleware infrastructure for the data collection and publication and (iii) its evaluation (also in conjunction with simple online data analysis applications implemented on top of frameworks such as Apache Storm or Apache Spark).

Background & Requirements

- Computer Science or related programs
- Classes in computer networks, distributed systems, or related ones
- Experience in Java or C++

Environment

We offer you a stimulating work atmosphere and motivated advisors.

Contact

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