



Automobile Manufacturer

Precise vehicle tracking on the basis of sensor data

For a globally acting, innovative automobile manufacturer, comSysto is developing a solution to create a precise street map.

Requirements

- Accurate determination of vehicle locations on streets or in parking garages without GPS and on the basis of data from various vehicle sensors
- Data are filtered out of several terabytes of log data from the test fleet and aggregated
- Development of a highly scalable data analysis platform for batch data processing
- Efficient storage and query of geo-referenced data
- Combination of various trips to develop a precise street map

Technologies

- Core: Java 8, Spring Boot
- Data analysis: Apache Spark with Mesos
- Web page: Mapbox
- Data storage: JSON, Parquet
- Monitoring: Graphite
- Infrastructure: Ansible
- Data science notebooks: Zeppelin (Spark), Jupyter (Python)

Procedures and Methods

- Explorative procedures with rough target objectives
- Quick visualisation of the data to evaluate the suitability of the data and the models
- GeoJSON standard so that acquired data can also be used easily by other systems.
- Automated configuration and administration of the IT infrastructure, quality assured infrastructure for AWS or internal servers

Advanced Analytics/Data Science

- Visual and statistical data exploration with data science notebooks
- Data curation such as interpolation if values are missing (e.g. GPS)
- Feature extraction and operationalisation of the predictive models
- Implementation of various predictive models using a Kalman filter