Web-based Dashboard: Visualization and Big Data Analytics for Autonomous Driving

(Studien-, Diplom-, Projekt-, Bachelor- oder Master-Arbeit)

**Prerequisites**
- Big Data and Analytics
- Semantic Web Technologies
- HTML / PHP / JS / CSS

**Supervisor**
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**Description**
This project focuses on designing and developing an extensible software architecture, able to accommodate additional services or components. The architecture consists of:
- Data Layer for ingestion, storing, processing and analyzing 3Vs of Big Data paradigm, empowering data-driven decision;
- Semantic Layer provides an uniform interface for accessing heterogeneous data, supporting reasoning and inference;
- Presentation Layer in form of a web-based dashboard, with services for managing, monitoring, analysing and visualising different aspect of the traffic system’s Digital Twin.

**Goals**
- Designing an extensible architecture and an uniform interface for accessing heterogeneous data sources.
- Using free open-source tools for designing, developing, processing and analyzing the requirements.
- Use Big Data algorithms to improve acquiring, storing, managing, analyzing and using the heterogeneous data.
- Information modeling of the traffic system to create a Digital Twin using Ontology and Knowledge Graphs.
- Developing a service-oriented real-time analytic web-based dashboard, using API/REST technologies.
- Developing an UI for simulations, a user-driven filtering real world map UI and an UI for multiple visualizations.