Bachelorarbeit / Studienarbeit / Forschungsarbeit / Masterarbeit

AI-Based Method for the Generation of Functional Architectures

Beschreibung

The Model-Based Systems Engineering (MBSE) paradigm has gained popularity in the automotive world for managing complexity and ensuring traceability during system development. This approach involves gathering and analyzing requirements as an initial step in the development process. By using these requirements, functional models can be derived, which provide deeper insights into the system. The goal of this work is to explore methods for semi-automating the creation of functional architectures based on the requirements. Here, we outline the primary tasks of this work as follows:

- Conceptual design of function architectures
- Development of a method to identify functions based on requirements
- Creation of a dataset of requirements
- Development of an effective NLP (Natural Language Processing) model

Beginn

01.11.2023

Voraussetzungen

- Good programming skills in at least one programming language (Python, C++)
- Knowledge of NLP, reinforcement learning, machine learning
- Ideally, basic knowledge in SysML
- Ability to work independently
- Excellent problem-solving and analytical skills
- Good knowledge of English

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