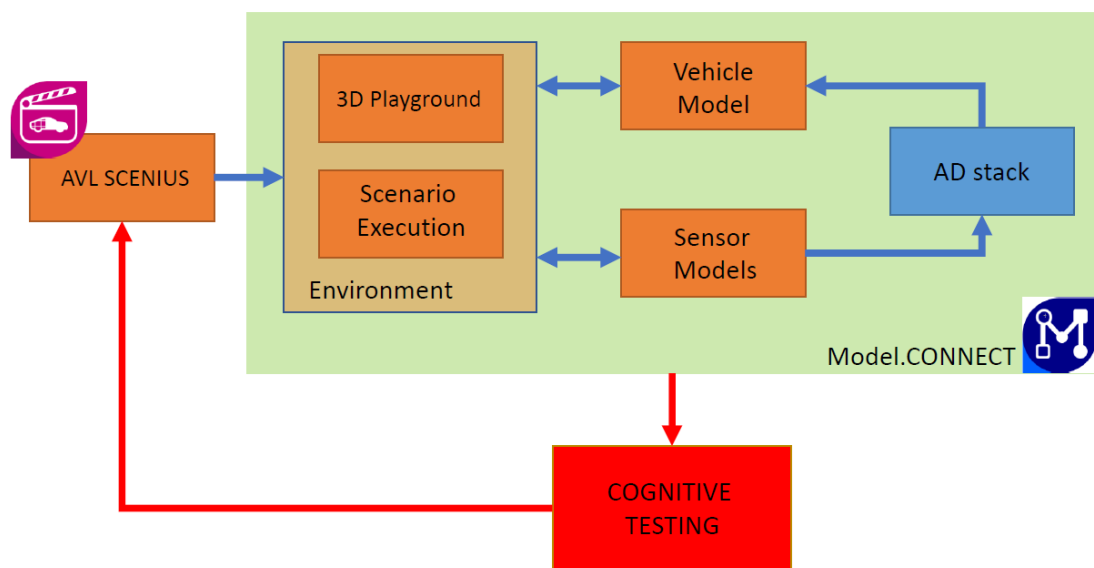


Student Trainee Position

Cross-technology in the field of
Cognitive Testing and ADAS systems

Evaluation of AI/ML methods for cognitive testing of AD stack



Testing an AD stack in a virtual environment requires a cognitive testing methodology that will go beyond the full factorial variation of the parameters of all possible scenarios. Different methodologies can be used to drive the generation of testing scenarios towards test cases critical for AD stack under testing. At the moment, AVL is considering the following methodologies: (1) Combinatorial testing, (2) the Active DoE method used in AVL Cameo, and (3) Adversarial testing based on Reinforcement Learning (under development in the ADEX project). An initial comparison of the methodologies (1) and (2) was performed only on the ADAS lane keeping function.

The task of the student trainee is to compare the performance and identify the limitations of Cognitive Testing methods developing at AVL with testing methods available in the literature e.g. [R1] on a publicly available AD stack (e.g. Autowave and Apollo).

Requested qualification of the student trainee:

1. Enrollment in the Master's (or final years of Bachelor's) program in Computer Science at TUG.
2. Good programming skills in Python or C++
3. Knowledge of Machine Learning

Contact person AVL:

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[R1] Qin et al. Automatic Testing With Reusable Adversarial Agents, arxiv 2021