Project/Master Thesis

Data-based analysis of a real-world brake system

The Dynamics Group happy to announce that we are currently looking for a highly motivated, independently working and ambitious student for a project thesis. Within a new research project we develop an AI-driven brake system control strategy for electrified vehicles. Using deep learning, we aim at predicting the friction sounds and brake particle emissions of real braking systems in collaboration with automotive manufacturer and suppliers, such as AUDI AG, VW AG and Hitachi Astemo. Within this project, we often work with real-world experimental data with has to be processed and analysed in order to obtain the desired information.

This thesis aims at closing the gap between information that is necessary for simulations on one hand, and available measurement channels on the other hand. A detailed study of the real-world measurement setup as well as the required physical quantities will be performed to develop computational methods for data interpretation and augmentation.

Project milestones:

- Detailed literature survey on the battery electric brake system, particularly loads at the brake level and energy balance of the system
- Explorative data analysis of real-world brake system data
- Documentation, description and interpretation of the results, writing a thesis report

Your profile and skills:

- Demonstrated programming skills in Python or Matlab
- Knowledge of nonlinear structural dynamics, vibrations
- Structured way of thinking, working, and communicating

Interested? Please contact: Charlotte Geier (charlotte.geier@tuhh.de)

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