



# Angewandte Elektronik- und Softwaresysteme

Prof. Dr.-Ing. Karl-Ludwig Krieger

Student projects

## Detection of multiple damages in a two-stage planetary gearbox

### Project description:

The aim of the research project is to implement acoustic condition monitoring for the gearbox in hybrid van carriers.

The overall system consists of the acquisition of acoustic signals and an algorithm-based evaluation of these for monitoring the bearing and gear components in the gearbox.

### Scope of work:

A deep learning model for detecting individual damage at bearing or gearing components has already been implemented as part of previous investigations. However, as the wear progresses, it is also possible for several cases of damage to occur at the same time. The previous model cannot detect this.

The aim of this work is to develop methods to adapt the existing model to multiple detection.

For this purpose, some preliminary investigations are already available on which to expand. The selection of possible methods can be predefined or developed with your own ideas.

### Prior knowledge:

- Basic knowledge of Python
- Knowledge of Deep Learning especially CNNs is advantageous, but not necessary
- Reliability and motivation to research

### Target group:

Student assistant  
CIT/CMM

### Topics:

Software	Data processing	Acoustic	Deep learning
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