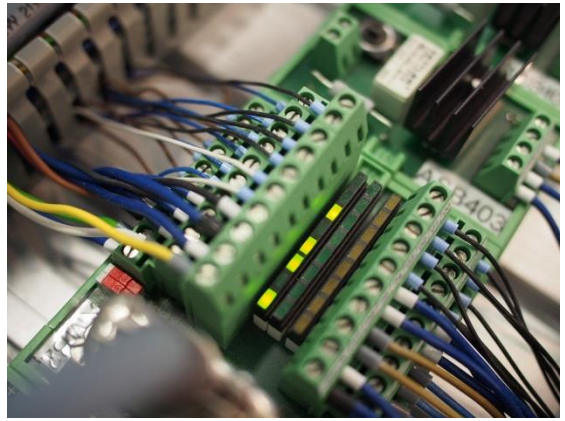
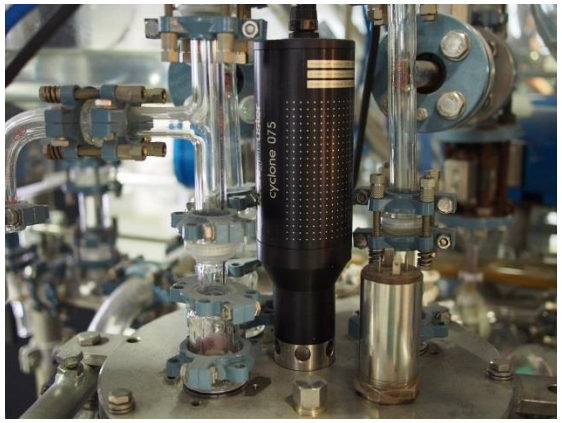


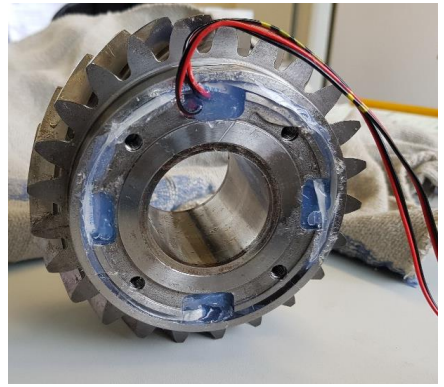


Development of an Information Model for Intelligent Machine Elements (BA/SA/MA)

Lehrstuhl für Automatisierung und Informationssysteme
Technische Universität München
Prof. Dr.-Ing. Birgit Vogel-Heuser

Motivation:

Mechanical components, such as gears or bearings, are evolving into connected intelligent machine elements enabling condition monitoring and interoperability. As a result, there is a need for standardized, interoperable information models to describe their state, capabilities, and context within cyber-physical systems.



Goal & Methodology:

The aim of this thesis is to design a scalable information model for intelligent machine elements. The model should support real-time data exchange, be consistent with existing industrial standards, and allow interoperability between intelligent machine elements. A first prototype is to be developed and validated with the specific application of a sensor-integrating gear and then generalized by considering other applications, such as intelligent bearings or screws.

Requirements:

- Strong interest in model-based system engineering (MBSE)
- Familiarity with UML/SysML or domain-specific languages would be helpful
- Independent and reliable working style as well as willingness to learn new tools and methods

In case of interest, please send your CV and current grade transcripts to the contact below.

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