

## **Diplomarbeit (Master Thesis)**

**Announced: 09.12.2020**

In manufacturing enterprises, a large part of the knowledge exists in texts. However, these texts often only exist in the form of photos of documents or as scanned images, like CAD drawings. In this form, the documents can neither be edited, analyzed, nor searched specifically for content.

To enhance searchability of documents and improve utilization of poor-structured or unstructured knowledge, the present master thesis announcement aims at systematic investigation of the state-of-the-art approaches and providing a proof-of-concept demonstrator involving

- i) Digitalization of the document,
- ii) Optical Character Recognition (OCR),
- iii) Text Mining of the digitalized content, and
- iv) Semantification of annotated documents/texts

The exact scope and technical elaboration of these steps will be based on a literature analysis and subsequent implementation of a semi-automatic proof-of-concept text analytics pipeline, which will then be verified on a practical example. The overall objective will be defined towards addressing the effect of digitization of documents on improving maintenance or logistics (decision-making) processes, and identifying required process steps and related improvement measures.

Highly motivated master students with a background in Mechanical Engineering-Management (Wirtschaftsingenieurwesen-Maschinenbau), Mechanical Engineering (Maschinenbau), and Business Informatics (Wirtschaftsinformatik) are encouraged to apply. Especially the topic suits ones with a good background in principles of production management and industrial engineering and the motivation to learn the systematic state of the art analysis in the areas of maintenance and AI.

The thesis will be supervised by the [Research Group of Smart and Knowledge-Based Maintenance](#).

The language of the thesis can be in German or English.

