3D Visualization of Ontology Evolution in Automated Production Systems (aPS) (SA/MA)

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

Topic:

Automated production systems (aPS) undergo continuous evolution to adapt to changing requirements, resulting in changes to their heterogeneous engineering data. Ontologies are commonly used to represent and manage knowledge and information in intelligent aPS, including building and exploring dependencies between different sources of information. To understand the changes in such systems over time, it is essential to visualize the evolution of ontologies.

The objective of this thesis is to develop a 3D visualization concept and a supporting tool to track information and knowledge evolution in aPS, leveraging engineering data from different sources and evolution phases of the xPPU (Pick and Place Unit) demonstrator. The tool will generate dynamic and interactive visualizations of ontology evolution, enabling users to identify new components, system functions, and their relationships, query required information, and track data changes from different perspectives.

Requirement:

- Interest in automated production systems, knowledge and information management, 3D visualization
- Independent way of working
- Knowledge of python and 3D visualization tools would be desirable
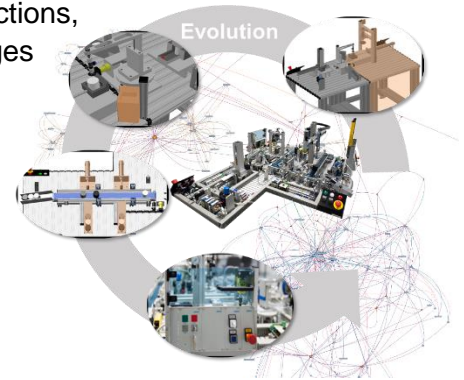
Fan Ji, M.Sc.; Jingyun Zhao, M.Sc.

Tel.: +49 (0) 89 / 289 16437
E-Mail: fan.ji@tum.de; jingyun.zhao@tum.de