At the Chair of Logistics and Supply Chain Management of TUM School of Management we are looking for an interested and qualified student to conduct his/her Master’s Thesis on the topic:

**Inventory Control: Identification and Prediction of Obsolete Stock in Manufacturing (in cooperation with Faurecia Clean Mobility)**

Inventory management is concerned with reducing inventories while preventing shortages. Demand-oriented planning is intended to prevent excessive and thus obsolete stocks. On the other hand, it is a common problem to dispose of articles that were needed (for example, for short-term production requirements, long-term spare parts, or substitutes for other articles). The scope of the thesis is to analyze (historical) data to classify parts as active, in production, or obsolete using Machine Learning (ML) Techniques within a real-world manufacturing environment. The approach developed is intended to enable risk assessment based on the derived influencing variables. A final validation should reveal savings potentials and evaluate the benefits of the ML model.

**Selected research tasks**

- Review the relevant literature (basic research done), problem related to Final Order Problems
- Develop approach for obsolete part prediction and identification (Proof of Concept has been done by Faurecia). Approach may either be classic (OR) or ML based
- Data analysis (data provided by Faurecia)
- Deduct decision rules/inventory strategies and conduct a numerical study
- Apply and validate approach on real-world data
- Quantify benefits as well as potential limitations

**Requirements**

The thesis is particularly suitable for master students with a major in Operations and Supply Chain Management who have strong analytical skills and the ability to work independently. Programming experience (Machine Learning, Data Analysis) is required.

**About Faurecia**

Faurecia is a global automotive supplier headquartered in Nanterre, France. The company develops cutting-edge solutions for smart vehicle interiors and sustainable mobility. In 2018 it was the 9th largest international automotive parts manufacturer in the world and #1 for vehicle interiors and emission control technology. The cooperating plant is in Augsburg (international cooperation possible).

**Begin:** From now on

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**Application:** Email with curriculum vitae and transcript of records to logtheses.wi@tum.de