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 thesis on the topic

**End-to-End Spare Parts Management in Service Supply Chains (OEM to Dealer)**

**Introduction to ClearOps**
ClearOps, a Munich-based B2B software startup, is at the forefront of ensuring global part and service availability for heavy machinery across complex service supply chains. Our platform connects OEM systems, dealer ERP systems, and machine telematics systems, leveraging end-to-end service supply chain data to precisely predict future parts demand, execute orders, and coordinate global workshop and technician forces. This ensures that parts are available whenever and wherever needed, technicians are equipped with proactive information on future service incidents, and ultimately, machines are kept operational. By centralizing service supply chains on a single platform, ClearOps supports manufacturers in the agricultural machinery, construction machinery, power tools, material handling, automotive, and trucking industries, keeping the world of machinery moving efficiently.

**Importance of Planning**
End-to-end parts planning is a complex task that requires continuous analysis and improvement. At ClearOps, we recognize the need to enhance our planning capabilities from both algorithmic and technological perspectives. Our goal is to incorporate the latest technologies, such as neural networks, and enrich our planning foundation by integrating not only historic demand data but also current asset data, future service behavior, and telematics data. This comprehensive approach aims to optimize fill-rates at the point of sale, which is typically the dealer.

**Research Opportunity**
We invite students to collaborate with us on their master thesis, focusing on the critical task of revamping our planning processes. This research will contribute to developing advanced planning algorithms and integrating cutting-edge technologies, ultimately improving the efficiency and effectiveness of our service supply chain solutions.

**Key project tasks:**
- Conducting a literature review on service parts planning including influential factors beyond historic demand
- Data preparation and cleansing from ClearOps data
- Developing a model to meet ClearOps’ operational requirements
- Performance Assessment and Cross-validation
- Deriving managerial insights and decision support to select appropriate technological and algorithmic combination to meet stakeholder needs

**Requirements:**
The thesis is suitable for Master in Management and Technology students with a major in operations and supply chain management. The ability to work independently as well as analytical and inventory management skills are required. Knowledge of Python programming and machine learning is required. Knowledge of mathematical programming and optimization is preferred. The thesis should be written in English.

Earliest begin: as soon as possible

Supervisor: tba

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