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 IDP on the topic

**IDP**

**Improving Human-AI Collaboration in Omnichannel Networks: Algorithmic Solutions for Shipment and Markdown Decisions**

The retail landscape is undergoing a transformation driven by the integration of artificial intelligence (AI). The interplay between AI systems and human decision-makers is becoming increasingly critical in optimizing retail operations. This project focuses on developing an algorithm that collaborates with retail managers to determine the most cost-effective strategy between shipping products from stores or applying markdown pricing. The goal is to balance logistical efficiency, inventory turnover, and profitability in an omnichannel setting.

**Key project tasks:**

- Literature review on relevant fields of study
- Analyze current omnichannel strategies for product shipment and markdown pricing
- Propose a framework for the effective implementation of Human-AI collaborative decision-making in omnichannel retail networks
- Create a simulation to test the algorithm under various scenarios

**Requirements:**

This interdisciplinary project is open to students at TUM with strong programming skills, particularly in Python. Candidates should be able to structure research effectively, encompassing exploration, focusing, validation, and detailing, and work independently. A robust background in algorithm development, machine learning, or AI is required. Knowledge of retail operations and supply chain management is highly beneficial. The relevant suggested course for this IDP is Inventory management.

**Earliest begin:** as soon as possible

**Supervisor:** Mahsa Nakhost

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