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:

Coordinating Replenishments in Stochastic Inventory Routing using Replenishment Policies

The stochastic inventory routing problem (SIRP) merges Vehicle Routing and Inventory Management under demand uncertainty. Instead of sequentially solving the inventory and routing problems, it simultaneously accounts for the number of goods, time of delivery, and delivery routes. Solving the problem optimally is, however, often too complex and raises the need for approximate solution methods, such as applying ordering policies according to cost approximations. This Master Thesis should focus on different possibilities to formulate the SIRP approximately and evaluate various ordering policies and routing cost approximations connected to the formulations.

Selected research tasks:
- Literature Review
- Implementing SIRP using a general-purpose programming language (e.g., C++, Java, python)
- Identification and implementation of suitable ordering policies and routing cost approximations
- Comparison and Evaluation under various problem characteristics

Requirements:
The thesis is for Master students of the study-program TUM-BWL. The ability to work independently as well as analytical skills are required. Knowledge of mathematical programming, optimization, and a general-purpose programming language (e.g. C++, Java, python) is required. The thesis should be written in English.

Begin: Ongoing

Advisor: Sebastian Malicki

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