

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

Leveraging Artificial Intelligence to Enhance Sustainability in Supply-Chain Management

Companies face mounting pressure from regulators, investors and consumers to reduce the environmental and social footprint of their supply chains. Artificial-intelligence (AI) techniques—ranging from machine-learning prediction models to reinforcement-learning and generative optimization—offer powerful levers for reducing carbon emissions, material waste and energy use while maintaining service levels and cost efficiency. However, AI initiatives in this domain often fail to scale because they are applied in isolation or without a clear understanding of supply-chain context. This thesis therefore aims to design, implement and evaluate AI approaches that directly target sustainability KPIs within an end-to-end supply-chain setting

Key project tasks:

- Literature review on relevant fields of study
- Problem definition and data preparation
- AI Model Development
- Benchmarking & Experiments
- Managerial Implications

Requirements:

The thesis is suitable for Master in Management and Master in Management and Technology students with a major in operations and supply chain management. Strong programming abilities in at least one general-purpose language—such as Python, Julia, or C++—and familiarity with machine-learning libraries are expected. A solid grounding in supply-chain management is essential, and prior experience with sustainability assessment is considered advantageous. The candidate must also demonstrate the capacity to work independently, think analytically, and communicate results clearly and convincingly in English.

Earliest begin: July 2025

Supervisor: Laura Visintainer Lerman

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