

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

Bachelor thesis

on the topic

AI for Net-Zero Manufacturing: A Systematic Evidence Synthesis and Meta-Analytic Assessment

Manufacturing firms face intensifying pressure to decarbonize operations, reduce energy use, and align with net-zero commitments driven by global climate goals, regulatory mechanisms, and ESG/CSR expectations. In parallel, artificial intelligence has rapidly expanded across industrial contexts, supporting process optimization, predictive maintenance, energy management, carbon-footprint monitoring, and strategic decision-making. This project systematically investigates the operational and environmental impact of AI adoption in industrial contexts, synthesizing empirical evidence through meta-analysis and developing an integrated conceptual framework that links AI capabilities to net-zero pathways in manufacturing.

Key project tasks:

- **Systematic literature review**
- **Meta-analyses**
- **Development of an integrated framework**

Requirements:

The thesis is suitable for bachelor students with a major in operations and supply chain management. A solid grounding in supply-chain management is essential, with prior experience in sustainability assessment regarded as an asset. Finally, successful applicants must be able to work independently, think analytically, and communicate their findings in clear, impactful English.

Earliest begin: December 2025

Supervisor: Laura Visintainer Lerman

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