

## Masterthesis

# Future Challenges and Opportunities of Autonomous Urban Logistics: Mixed Structured and Data-Driven Literature Review



**Field:** Urban logistics is currently facing major challenges. The increasing volume of parcel deliveries and more pedestrian-centric city planning demands more efficient and environmentally friendly last-mile delivery solutions. Here, the automation of various logistical tasks through small mobile robots could be a promising solution. Especially recent advances in autonomous driving, robotics, and artificial intelligence enable future advances for autonomous urban logistics.

**Problem Statement:** Within your thesis, you will review the current state of the art in mobile robotics for urban scenarios, using different methodologies. Due to the large number of publications in the field, you'll employ new innovative strategies to extract knowledge from large amounts of text data, for example NLP-based topic analysis to reveal key topics and future directions. Using this, you will conduct a structured literature review (SLR) to explore these topics further.

**Required Skills:** Interest in autonomous mobile robotics, systematic thinking, and creativity. Experience in python, data analysis, and NLP is beneficial but not required.

**Benefits:** You will be working closely with a young, dynamic, and enthusiastic team of researchers and students on industry-relevant topics. Your contributions are directly applied in various projects and research topics. Furthermore, we offer extracurricular workshops on scientific writing, software engineering and more. Supervision includes weekly meetings with your supervisor and team. A publication-based thesis is possible.

**Research Group:**  
Robotics and Interactive Systems

**Thesis Type:**  
Literature Review, Data Analysis

**Majors:**  
Mechanical Engineering, Mechatronics, Industrial Engineering

**Start Date:**  
immediately

**Language:**  
German/ English

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