Chair of Information System Development and Operation
TUM School of Computation, Information and Technology
Technical University of Munich

Fraunhofer

Master's thesis: AI-Supported Scientific Paper Finalization

Motivation:
Publishing scientific papers is a central responsibility of researchers and an important means of disseminating scientific knowledge. However, **transforming completed research into a submission-ready manuscript can be highly time-consuming**. Activities such as revising and improving the manuscript, ensuring a coherent structure, refining language, and adapting the paper to the requirements of a specific journal or conference require substantial effort. While these activities are essential for producing a high-quality publication, **they do not directly contribute to the generation of new scientific knowledge**.

Generative Artificial Intelligence (GenAI) offers promising opportunities to support researchers in these activities. Previous research has shown that GenAI can assist researchers across various stages of the research process, including the creation and revision of scientific texts [1]. **However, the systematic use of GenAI to support the finalization of completed research and the preparation of manuscripts for submission remains comparatively underexplored**. In particular, **there is a need to investigate which specific activities can be effectively supported by AI and how these capabilities can be integrated into a coherent system.**

This master's thesis therefore addresses the challenge of **developing an AI-supported approach that assists researchers in improving and preparing scientific manuscripts for submission**. The focus is on **identifying relevant use cases, implementing them as components of an integrated system, and evaluating both the individual AI-supported components and the overall system**. The resulting system is intended to **demonstrate how GenAI can reduce the effort required for manuscript finalization while maintaining human oversight and responsibility for the scientific content.**

[1] Witte, J., Bayer, S., & Weber, I. (2026). *Use cases for the application of generative artificial intelligence for researchers: A survey* [Preprint]. HAL. https://hal.science/hal-05463006v1

Chair of Information System Development and Operation
TUM School of Computation, Information and Technology
Technical University of Munich

Master's thesis: AI-Supported Scientific Paper Finalization

Aim of the thesis:

- To identify use cases demonstrating how AI can assist researchers in improving a manuscript and preparing it for submission
- To develop a system based on the previously identified use cases
- To carry out an automated evaluation of each AI component
- To conduct an overall evaluation of the system, e.g. through a user study
- To deploy the system in a test environment on the Fraunhofer infrastructure

Planned start: As soon as possible

General conditions: An *unpaid* contract is agreed between Fraunhofer and the student.

Supervisor: Jonas Witte