

# Tim Schopf

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in tim-schopf

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## Professional Experience

- Jan. 2025 – Present    **ScaDS.AI & Dresden University of Technology**  
*Research Associate*  
Researching generative large language models (LLMs) and knowledge graphs (KGs) for “evidence-based AI” and “scientific discovery”
- Sept. 2020 – Aug. 2024    **TUM Chair of Software Engineering for Business Information Systems**  
*Research Associate*  
Led the “NLP-KG” project, which used LLMs, retrieval augmented generation (RAG), and a KG to enhance scientific document search  
Co-led the “CreateData4AI” project, which aimed to create an end-to-end pipeline for structured data generation for unstructured text corpora  
Co-led the “Technology Scouting as a Service” project, which aimed to develop an AI-based search algorithm for the engineering domain  
Co-organized “hackaTUM”, the official hackathon of the Department of Computer Science at the Technical University of Munich  
Taught various software engineering and natural language processing courses in addition to supervision of thesis students
- Nov. 2019 – Apr. 2020    **MHP Management and IT Consulting**  
*Master’s Thesis Student*  
Researching defenses against adversarial attacks on deep neural networks for computer vision in the automotive industry
- Oct. 2018 – Mar. 2019    **Mercedes-Benz Group**  
*Data Science Intern*  
Responsible for identifying dealer fraud using anomaly detection
- Feb. 2018 – Sept. 2018    **KIT Institute for Technology and Management in Construction**  
*Student Research Assistant*  
Responsible for CAD modeling of 3D prints and Wiki database updates








## Education

- Jan. 2021 – Present    **Technical University of Munich (TUM)**  
*Ph.D. Candidate in Computer Science*  
Research Areas: Natural Language Processing and Knowledge Graphs
- Oct. 2017 – Aug. 2020    **Karlsruhe Institute of Technology (KIT)**  
*Master of Science in Information Engineering and Management*  
Area of Specialization: Machine Learning and Data Science
- Oct. 2012 – Sept. 2017    **Universities of Stuttgart & Hohenheim**  
*Bachelor of Science in Information Systems*  
Area of Specialization: IT in Business Enterprises

## Selected Publications

- 1 S. Meisenbacher, **T. Schopf**, W. Yan, P. Holl, and F. Matthes, “An improved method for class-specific keyword extraction: A case study in the German business registry,” in *Proceedings of the 20th Conference on Natural Language Processing (KONVENS 2024)*, P. H. Luz de Araujo, A. Baumann, D. Gromann, B. Krenn, B. Roth, and M. Wiegand, Eds., Vienna, Austria: Association for Computational Linguistics, Sep. 2024, pp. 159–165.  URL: <https://aclanthology.org/2024.konvens-main.18>.
- 2 **T. Schopf**, A. Blatzheim, N. Machner, and F. Matthes, “Efficient few-shot learning for multi-label classification of scientific documents with many classes,” in *Proceedings of the 7th International Conference on Natural Language and Speech Processing (ICNLSP 2024)*, M. Abbas and A. A. Freihat, Eds., Trento: Association for Computational Linguistics, Oct. 2024, pp. 186–198.  URL: <https://aclanthology.org/2024.icnlp-1.21>.
- 3 **T. Schopf** and F. Matthes, “NLP-KG: A system for exploratory search of scientific literature in natural language processing,” in *Proceedings of the 62nd Annual Meeting of the Association for Computational Linguistics (Volume 3: System Demonstrations)*, Y. Cao, Y. Feng, and D. Xiong, Eds., Bangkok, Thailand: Association for Computational Linguistics, Aug. 2024, pp. 127–135.  URL: <https://aclanthology.org/2024.acl-demos.13>.
- 4 **T. Schopf**, D. Braun, and F. Matthes, “Evaluating unsupervised text classification: Zero-shot and similarity-based approaches,” in *Proceedings of the 2022 6th International Conference on Natural Language Processing and Information Retrieval*, ser. NLPPIR ’22, Bangkok, Thailand: Association for Computing Machinery, 2023, pp. 6–15, ISBN: 9781450397629.  DOI: 10.1145/3582768.3582795.
- 5 **T. Schopf**, E. Gerber, M. Ostendorff, and F. Matthes, “AspectCSE: Sentence embeddings for aspect-based semantic textual similarity using contrastive learning and structured knowledge,” in *Proceedings of the 14th International Conference on Recent Advances in Natural Language Processing*, R. Mitkov and G. Angelova, Eds., Varna, Bulgaria: INCOMA Ltd., Shoumen, Bulgaria, Sep. 2023, pp. 1054–1065.  URL: <https://aclanthology.org/2023.ranlp-1.113>.
- 6 P. Schneider, **T. Schopf**, J. Vladika, M. Galkin, E. Simperl, and F. Matthes, “A decade of knowledge graphs in natural language processing: A survey,” in *Proceedings of the 2nd Conference of the Asia-Pacific Chapter of the Association for Computational Linguistics and the 12th International Joint Conference on Natural Language Processing (Volume 1: Long Papers)*, Y. He, H. Ji, S. Li, Y. Liu, and C.-H. Chang, Eds., Online only: Association for Computational Linguistics, Nov. 2022, pp. 601–614.  URL: <https://aclanthology.org/2022.aacl-main.46>.

## Skills & Certifications

Languages	 German Native Speaker, Fluent in English
Computer Languages	 Python, R, C++, Java, JavaScript, TypeScript
ML/DL Frameworks & Libraries	 PyTorch, LangChain, Hugging Face, NumPy, SciPy, Pandas, scikit-learn, spaCy, NLTK, Gensim, Matplotlib, Seaborn
Other Technologies & Tools	 FastAPI, SQL, MongoDB, Weaviate, Pinecone, Neo4j, Docker, HTML/CSS, $\LaTeX$ , Git, Next.js
Research	 Academic research and teaching in the fields of Natural Language Processing, Knowledge Graphs, and Web Application Engineering
Personal	 Personable, Strong Work Ethic, Organization, Excellent Communication Skills
Certifications	 Professional Scrum Master™ (PSM I)