

# FABIAN WENZ

Master of Mathematics in Data Science

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## EXPERIENCE

### PhD in database systems

Technical University of Munich (TUM)

📅 Sept 2025 – Mar 2026

- Research on AI-enhanced data placement
- Continued development and presentation of BENCHPRESS for text-to-SQL benchmark curation.
- Contributed to Athena-tools, a plug-and-play advisor for Retrieval-Augmented Generation.
- Teaching Assistant for Advanced Algorithms for Competitive Programming.
- Designed and delivered lectures on RAG and HNSW indexing.

### Research Assistant (under scholarship)

Technical University of Munich (TUM)

📅 April 2024 – Sept 2025

- Contributed to the development of *Athena-tools*, a plug-and-play advisor for Retrieval-Augmented Generation using vector databases.
- Co-authored a publication accepted at IISWC 2025, focusing on practical RAG pipeline optimization and evaluation.
- Supported benchmarking and tool development for integration with vector database backends.

### Research Assistant (under scholarship)

Massachusetts Institute of Technology (MIT)

📅 Oct 2024 – Sept 2025

- Contributed to LLM research on enterprise text-to-SQL tasks under the guidance of Prof. Michael Stonebraker.
- Co-authored a paper on data integration and benchmark curation for CIDR 2025.
- Developed human-in-the-loop annotation systems for Text-to-SQL benchmark generation.

### C++ Database Engineer (part-time)

Celonis

📅 Sep 2022 – Mar 2024

- Develop and implement new, innovative features and algorithms for celonis' query engine in C++, Java and Python
- Increase the reliability and performance of existing components of celonis' query engine

### Data Scientist – Fixed Income (part-time)

Amundi S.A.

📅 Jul 2021 – Mar 2022

- visualization of fond-mandates

## STRENGTHS

Persistent Logical-thinking

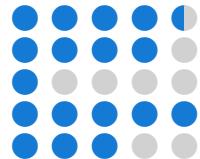
Detail-driven

Algorithms Optimization Efficiency

Data Structures AI

## LANGUAGES

English (C1)  
Italian (B2)  
Chinese (A1.1)  
German (C2)  
Latin (Big Latinum)



## EDUCATION

Master Thesis: Leveraging LLMs for Querying Large Datawarehouses: A New Paradigm

Massachusetts Institute of Technology

📅 April 2024 – Oct 2024

M.Sc. in Mathematics in Data Science  
Technical University of Munich

📅 Oct 2021 – Mar 2025

B.Sc. in Computer Science

Technical University of Munich

📅 Oct 2018 – Sep 2021

Thesis: An Experimental Evaluation of Heuristics for Constructing Hierarchical Cut Sparsifiers

B.Sc. in Mathematics

Technical University of Munich

📅 Oct 2014 – Sep 2018

Thesis: Mathematical Models of Biological Processes in Nephrons

University Entrance Qualification

Louise-Schoeder-Gymnasium

📅 Sep 2006 – Jul 2014

- implementation of an automated monthly report-generator interacting with large data-sets in Python and MySQL

## Intern & Working Student as Data Scientist in Tax, Technology and Transformation

**Ernst & Young GmbH**

📅 Nov 2019 – Jul 2020

- implementation of a web-crawler in Python in the pharmaceutic field for identifying newly added or changed regulations
- developing an automatic email-newsletter, web-based applications in the tax field for calculations and visualizations in Power Bi and a Desktop-application in Python in sharebased salary

## Student Assistant

**Technical University of Munich**

📅 Feb 2019 – Jul 2019, Sep-Oct 2018, Sep-Oct 2020, Apr-Sept 2022

- tutor advanced mathematics, introductory mathematics, L<sup>A</sup>T<sub>E</sub>X-scripting, and exam-corrector

## Internship Software development

**BMW Group**

📅 Mar 2018 – Sep 2018

- implementation of an optimization algorithms for generating realistic load cases for virtual concept-evaluations of the manual montage of flexible car-components

## PUBLICATIONS

(Presented by N. Liang)

### Tools-Athena: A Plug-and-Play Advisor for Retrieval-Augmented Generation using VectorDBs

📅 12-14 Oct 2025

📍 Irvine, IISWC 2025

📄 <https://ieeexplore.ieee.org/document/11241995>

(Presented by F. Wenz)

### BENCHPRESS: An Annotation System for Rapid Text-to-SQL Benchmark Curation

📅 17-19 Jun 2025

📍 Montreal, SEMLA 2025.

📅 18-21 Jan 2026

📍 Santa Cruz, CIDR 2026.

📄 <https://vldb.org/cidrdb/papers/2026/p16-wenz.pdf>

(Presented by F. Wenz)

### BEAVER: An Enterprise Benchmark for Text-to-SQL

📅 3 Sep 2025

📍 Vienna, ACL 2025.

📄 [arxiv.org/abs/2409.02038](https://arxiv.org/abs/2409.02038)

(Presented by F. Wenz)

### Mind the Data Gap: Bridging LLMs to Enterprise Data Integration

📅 19-22 Jan 2025

📍 Amsterdam, CIDR 2025.

📄 [vldb.org/cidrdb/papers/2025/p34-kayali.pdf](https://vldb.org/cidrdb/papers/2025/p34-kayali.pdf)

## COMPUTER-KNOWLEDGE

C++



Haskell,

Java, MySQL, Python



Matlab, Git, Linux, L<sup>A</sup>T<sub>E</sub>X



Lua, Adobe

(Photoshop, Illustrator)



Microsoft Office

(Word, Excel, PowerPoint)



PowerBi



## REFEREES

**Prof. Jana Giceva**

✉️ database system lab (TUM)

✉️ available upon request

**Dr. Cagatay Demiralp**

✉️ Computer Science and Artificial Intelligence Laboratory (MIT)  
+ Amzon Web Services & AI

✉️ available upon request

**Dr. Nesime Tatbul**

✉️ Computer Science and Artificial Intelligence Laboratory (MIT)  
+ Intel Labs

✉️ available upon request

**Prof. Michael Stonebrakker**

✉️ Computer Science and Artificial Intelligence Laboratory (MIT)

✉️ available upon request

**Felix Weiß**

✉️ Celonis

✉️ available upon request

**Tugrul Kolad**

✉️ Amundi

✉️ available upon request

**David Lappe**

✉️ (former) Ernst & Young GmbH

✉️ available upon request

**Bernhard Wolf**

✉️ BMW Group

✉️ available upon request

**PD. Andreas Johann**

✉️ Chair for Advanced Mathematics and Analytical Mechanics (TUM)

✉️ available upon request