Manuel Widmoser

📞 +43 664 496 3976   ✉ m.widmoser@gmail.com   🔗 mwidmoser.github.io   ⊠ November 11, 1990   📍 Salzburg, Austria

Experience

Research Assistant | **University of Salzburg** *(during PhD studies)*
📅 10/2021 – 09/2025   📍 Salzburg, Austria
- Worked on efficient algorithms and index structures for similarity queries (e.g., HNSW, inverted list index) that scale to massive data collections.

Working Student (Software Engineering) | **Celonis SE**
📅 02/2021 – 05/2022   📍 Munich, Germany
- Designed and implemented an efficient and robust set similarity join algorithm in C++ for process mining datasets with challenging characteristics.
- A patent application has been filed for our algorithm.

Project Assistant | **University of Salzburg**
in cooperation with Celonis SE
📅 07/2020 – 01/2021   📍 Salzburg, Austria
- Worked in a team on an industry problem with the goal to analyze and understand large business process logs.
- Implemented and evaluated efficient clustering algorithms in C++.

Teaching Assistant | **University of Salzburg**
📅 10/2017 – 06/2020   📍 Salzburg, Austria
- Assisted in teaching and material preparation for database courses.
- Built a Python web tool that links publications to conference statistics.

Visiting Scholar | **Purdue University**
📅 08/2019 – 09/2019   📍 West Lafayette, USA
- Developed a randomized inference procedure in C++ and Python for argumentative deep structured prediction problems in NLP.
- Selected out of eight participants nationwide for a two-month internship.

Intern Research & Development | **Authentic Vision GmbH**
📅 07/2018 – 09/2018   📍 Salzburg, Austria
- Worked on fraud detection of corrupted holographic fingerprints using ML.

Earlier Employment

📅 03/2015 – 08/2015 | Chef de Partie | 📍 **Hotel Sacher Salzburg** (AT)

📅 05/2012 – 01/2014 | Chef de Partie | 📍 **Hotel Schloss Fuschl** (AT)

📅 12/2010 – 04/2012 | Chef de Partie | 📍 **Restaurant Heimatliebe** (AT)

📅 05/2010 – 11/2010 | Military Service | 📍 **Austrian Armed Forces** (AT)

📅 12/2009 – 05/2010 | Commis de Cuisine | 📍 **Restaurant Obauer** (AT)

📅 09/2006 – 08/2009 | Apprentice as a Chef | 📍 **Hotel Der Lärchenhof** (AT)

Skills and Interests

- **Languages:** German (native), English (fluent)
- **Technologies:** C++, Python, RDMA, SQL, Git, Rust, Scala, Java
- **Interests:** Traveling, Guitar Playing, Music Production

Awards

Young Investigators Award 2024 | Runner-Up | University of Salzburg
- Topical Area: Research on the Data Driven: Digital and Analytical World

Education

PhD (Dr. techn.) | **University of Salzburg**
📅 10/2021 – 09/2025   📍 Salzburg, Austria
- Thesis: Scaling Similarity Queries to Massive Datasets
- Field of Study: Computer Science

Master's (Dipl.-Ing.) | **University of Salzburg**
📅 10/2018 – 08/2021   📍 Salzburg, Austria
- Field of Study: Computer Science

Exchange Student | **Tel Aviv University**
📅 02/2019 – 07/2019   📍 Tel Aviv, Israel

Bachelor's (B.Eng.) | **University of Salzburg**
📅 10/2015 – 08/2018   📍 Salzburg, Austria
- Field of Study: Computer Science

Publications

M. Widmoser, D. Kocher, N. Augsten
SHINE: A Scalable HNSW Index in Disaggregated Memory
Submitted 2025 | ⚙ shine-hnsw-index

M. Widmoser, D. Kocher, N. Augsten
Scalable Distributed Inverted List Indexes in Disaggregated Memory
📍 SIGMOD 2024 (A*), Santiago, Chile
🔗 10.1145/3654974 | ⚙ rdma-inverted-index

M. Widmoser, D. Kocher, N. Augsten, W. Mann
MetricJoin: Leveraging Metric Properties for Robust Exact Set Similarity Joins
📍 ICDE 2023 (A*), Anaheim, CA, USA
🔗 10.1109/ICDE55515.2023.00085

M. Widmoser, M. Pacheco, J. Honorio, D. Goldwasser
Randomized Deep Structured Prediction for Discourse-Level Processing
📍 EACL 2021 (A), Online (Virtual Event)
🔗 10.18653/V1/2021.EACL-MAIN.100

Teaching Experience

Parallel and Distributed Data Management
📅 Summer Term 2024 & 2025 (Lab) | MSc Course
- Developed Rust assignments covering distributed DBMS topics (e.g., parallel hash join and 2PC).
- Parallel similarity joins with Scala and Apache Spark.

Databases I
📅 Summer Term 2024 & 2025 (Lab) | BSc Course

Databases II
📅 Winter Term 2023/24 & 2024/25 (Lab) | BSc Course