

GABRIEL DAX

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EDUCATION

Technical University of Munich

Oct. 2020 – expected Mai 2023

PhD in the field of Computer Science at the TUM School of Engineering and Design.

Munich, Germany

Salzburg University of Applied Sciences

Sep. 2017 – Nov. 2019

MSc in Information Technology and Systems Management

Salzburg, Austria

- Relevant Coursework: Parallel Computing, Data Science and Analytics, Software Engineering, Applied Statistics;

Salzburg University of Applied Sciences

Sep. 2014 – July 2017

BSc in Information Technology and Systems Management

Salzburg, Austria

- Relevant Coursework: Operating Systems, Algorithms and Data Structures, Programming Languages;

EXPERIENCE

Technical University of Munich

Oct. 2020 – Present

Research Assistant

Munich, Germany

- Research as a PhD candidate on compression of individual aspects in deep learning and their architectures.
- Trained different model architectures and compressed aspects of the CNNs, benchmarked them on GPUs and FPGA, and published 13 papers for the doctoral thesis.

Bundeswehr University Munich

Dec. 2019 – Sep. 2020

Research Assistant

Munich, Germany

- Research on compression-based methods in spatial machine learning as a research assistant.
- Created a similarity metric for binary probabilistic data structures and reached current machine learning baselines.

German Aerospace Center

Feb. 2019 – July 2019

Student Research Assistant

Munich, Germany

- Master thesis on parameter- and feature-free change detection of satellite images with compression-based methods.
- Applied machine learning algorithms to remote-sensing images, and published 5 papers and an award for the thesis.

Fraunhofer IIS

Feb. 2017 – July 2017

Software Engineer, Intern

Erlangen, Germany

- Bachelor thesis to improve the performance of a distributed system for creating cinema movies.
- Developed C++ modules to measure performance in distributed systems, resulting in the ability to find bottlenecks.

PROJECTS

All projects are peer-reviewed published or are currently in the process.

Deep Learning on Custom Hardware | Python, TensorFlow

- Apply and benchmark deep learning models on FPGAs in the field of remote sensing using TensorFlow and VitisAI.

Compression in Spatial Deep Learning | Python, TensorFlow

- Project to evaluate the performance impact of compression and quantization of images in spatial deep learning.

Deep Learning Model Library | Python, TensorFlow

- Creation of a pipeline to train models dynamically instead of statically, resulted in a semi-automated system.

Trajectory Similarity | Python, C/C++

- Compressed local geometry sketches into Bloom filters and estimated the type using machine learning algorithms.

TECHNICAL SKILLS

Languages: (permanent use:) python, C++, (regular use:) C, Matlab, (familiar:) Java, SQL;

Software: (libraries:) TensorFlow, (operating systems:) Windows, Linux;

Developer Tools: Docker, Git, VS Code, Visual Studio, PyCharm;

ADDITIONAL EXPERIENCE AND AWARDS

Leadership (2020 - Present): Supervision of student tutors and theses, as well as guiding a student research assistant.

Instructor (2019 - Present): Teaching seminars as well as tutorials, and substituted for the professor in lectures.

Merit Scholarship (2015, 2018): In each of the master's and bachelor's programs, because of academic excellence.

Science Prize (2019): The master thesis was awarded with the science prize of the AK Salzburg in 2019.