MarioTheuermann

Engineering Professional | Software Engineering • Data Science • Teamwork

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+43 - censored - | Graz/Villach, Austria

"Engineering is the practice of learning."

EDUCATION

GRAZ UNIVERSITY OF TECHNOLOGY

Software Engineering & Management

Diplom-Ingenieur (M.Sc.)

April 2018 - June 2022 | Graz, Austria

Major: Intelligent Systems
Minor: Management & Strategy

Bachelor of Science

Oct 2014 - April 2018 | Graz, Austria

SKILLS

Operating Systems

macOS x86-64/ARM64
GNU/Linux x86-32/64/ARM64

Linux Distributions

Debian • Fedora • RHEL • Arch

Paradigms & Practices

Agile (DevOps, XP, Scrum)
Git-flow • OOP • RESTful

Languages

C • C++ • Bash • Python • Java
Kotlin • JavaScript • AsciiDoc • LaTeX

Databases

SQL • Couchbase NoSQL

Libraries & Frameworks

Pandas • NumPy • SciPy • Scikit-learn
Matplotlib • Seaborn • Plotly • OpenCV
PyTorch • TensorFlow (Keras) • ROS

Tools

Docker • VirtualBox • KVM/QEMU • Vagrant
Conda • Pyenv(-virtualenv) • Poetry
Git • Gitlab CI/CD • Jira
Vim • Tmux • POSIX commands and terminal utilities

Communication

English (C1/2-level) • German (native)

RECENT ROLES

SKYSPECS | Data Scientist - Innovation

Oct 2024 - present | Graz, Austria & Ann Arbor, MI

- Engineered and deployed a FastAPI-driven Python microservice architecture that delivers RESTful APIs for custom data processing, analytics, and machine learning tasks.
- Developing a machine learning application to detect unusually high rotor blade imbalance in wind turbines by analyzing high-frequency time-series data. Leveraging predictive models such as Random Forest, Gradient Boosting, and Ridge Regression, incorporating feature engineering, and hyperparameter optimization to enhance prediction accuracy.
- Building an LLM-based knowledge base, enabling clients to interact with their specific data analysis results. Currently evaluating low-code solutions, libraries like Langflow, and various vector storage and embedding technologies as part of a comprehensive RAG (Retrieval-Augmented Generation) pipeline.

SKYSPECS | Data Scientist - Product Improvement

July 2023 - Oct 2024 | Graz, Austria & Ann Arbor, MI

- Performed data manipulation, analysis, and visualization of large-scale time-series data, including SCADA (Supervisory Control and Data Acquisition) data from individual wind turbines, integrating additional sources such as meteorological data, error logs, and maintenance records. Applied statistical and machine learning methods to classify, cluster, and interpret data, identifying performance anomalies and enhancing operational efficiency. Utilized Python with libraries such as pandas, Matplotlib, Seaborn, Plotly, scikit-learn, NumPy, and SciPy.
- Developed algorithms to address critical challenges in the wind industry, such as production loss assessment, pitch misalignment detection, and performance analysis, ensuring efficiency and applicability for monthly execution across more than 6,000 client wind turbines.
- Introduced processes for coding standards, version control, and documentation, ensuring high-quality, maintainable, and scalable codebases, and facilitating collaboration among team members.

COURSEWORK

M.Sc. degree program

Knowledge Discovery & Data Mining
Machine Learning
Deep Learning
Web Technology
Expert Systems
Verification & Testing
Security Aspects in Software Development
General Management & Organization
Change Management
The Art of Feeback
Intercultural Social Competence

B.Sc. degree program

Data Structures & Algorithms
Statistics & Probability
Linear Algebra & Analysis
Computer Vision & Graphics
Computational Intelligence
Operating Systems
Software Maintenance
IT Security & Networking

INTERESTS

PROFESSIONAL

- Data Science and Data Engineering
- Automation Pipelines, Containerization, and Virtualization
- Intelligent Systems, Machine Learning, and Deep Learning
- Operating Systems and Linux Distributions
- Cryptology, Privacy, and System Security

PERSONAL

- Music: Expressing my love for music through extravagant and overly priced headphones while actively blocking out the remaining world around me.
- Sports and Health: I enjoy keeping my body healthy and fit through strength training in my home gym to compensate for the sedentary profession.
- Nature: Growing up in the mountains of Carinthia, I get a kick out of fresh air in peaceful and mountainous surroundings.

JOANNEUM RESEARCH | Research Assistant

Oct 2020 – June 2022 | Graz, Austria

- Engineer computer vision applications to enhance real-time object detection and pose estimation capabilities of a drone, using only single 2D-imagery from its calibrated camera system.
- Construct a robust data acquisition pipeline from a highly accurate infrared-based tracking system, utilizing the Robot Operating System (ROS), to generate a suitable dataset for algorithm development and testing.
- Develop and deploy Docker-based containerized services optimized for NVIDIA Jetson embedded computing platforms.
- Prepare and deliver detailed interim reports and presentations for the FFG (Austrian research funding agency), highlighting project progress, key findings, and strategic recommendations to ensure stakeholder alignment and continued project funding.

Publications:

- Automated Data Annotation for 6-DoF AI-Based Navigation Algorithm Development.
  Journal of Imaging **2021**, 7, 236.
- Protocol Design Issues for Object Density Estimation and Counting in Remote Sensing.
  IGARSS **2021**, pp. 2771-2774.

BYTEPOETS | Junior Developer

Aug 2018 – April 2019 | Graz, Austria

- Build and maintain responsive websites and user interfaces using HTML and modern frameworks like Spring and Bootstrap, ensuring scalability, cross-platform compatibility and optimal user experience.
- Design and develop native mobile applications for iOS and Android platforms, focusing on seamless integration and robust functionality.
- Implement RESTful web services interfacing with various databases such as Couchbase NoSQL and SQL, ensuring efficient data retrieval and storage.
- Facilitate continuous integration and continuous delivery (CI/CD) processes using Jenkins, enhancing development workflows and deployment efficiency.
- Employ Agile project management methodologies to streamline project execution and enhance team collaboration and productivity.

IAIK | Intern

Institute of Applied Information Processing and Communications

Aug 2017 – Nov 2017 | Graz, Austria

- Develop and optimize a custom Linux distribution tailored for specific applications using the Yocto Project.
- Implement encryption protocols to secure large parts of the system memory in a QEMU emulation environment, aiming to enhance data protection and security.
- Deploy custom Linux distribution images to ARM-based Xilinx Zynq7 Systems on Chip (SoC) and test system operation.

PRIOR EXPERIENCE

LAM RESEARCH

Villach, Austria & Fremont, CA

Electrical Engineer

Sept 2012 – Sept 2014

- Participate in the electrical assembly and prototyping of novel Lam-platform designs in Fremont, California.
- Support engineering activities such as design, test, modification, fabrication, and assembly of prototype electromechanical systems and experimental design circuitry.
- Conduct structured diagnostics and troubleshoot a broad range of hardware, software, and networking issues, ensuring system integrity and performance.

SEZ & LAM RESEARCH

Villach, Austria

Electrical/Test Engineer

Sep 2006 – Sept 2012

- Perform, evaluate and supervise electrical assembly of SEZ and Lam Research etch platforms as well as special customer requests.
- Contribute improvements to the configuration and documentation of mechanical drawings, wiring diagrams and internal test records.

SEZ

Villach, Austria

Apprenticeship Mechatronics Engineer

Sep 2002 – Mar 2006

- Successful completion of the mechatronics technician apprenticeship.
- Acquire basic electrical, mechanical, and computer science skills.