

# MarioTheuermann

Engineering Professional | Software Engineering • Data Science • Teamwork

✉ mario@theuermann.dev 🔑 key.pub 🏠 theuermann.dev 🗺 theuema 🌐 theuema

📞 +43 - censored - | 📍 Graz/Villach, Austria

## SUMMARY

I'm a passionate engineer who enjoys building software systems that integrate and automate data sources. My interests consist of both the technical aspects of software development and the process of extracting meaningful insights from data through statistical and machine learning methods. In addition to developing innovative solutions, I'm eager to improve, extend, and automate processes for existing systems in order to solve problems, elevate code quality, and enhance efficiency. What motivates me is to advance further in software development and engineering practices while also expanding my expertise in data analytics, machine learning, and data visualization. Next to my technical abilities, I'm interested to hone project planning and management skills within collaborative, agile team environments.

With over a decade in the semiconductor industry as a mechatronics engineer and years in diverse roles like software engineer, academic research assistant, and data scientist, I bring a robust background complemented by a Master's degree in Software Engineering and Management from Graz University of Technology. My career includes contributions in academia and industry, emphasizing initiative, meticulous documentation, and the clear communication of complex ideas.

## EDUCATION

### GRAZ UNIVERSITY OF TECHNOLOGY

📍 Graz, Austria

#### Diplom-Ingenieur (M.Sc.) in Software Engineering & Management

📅 April 2018 - June 2022

- Grade: Graduated with distinction
- Major: Intelligent Systems | Minor: Management & Strategy
- Thesis: Embedded Image-based Localization For Assessment Of Critical Infrastructure

#### Bachelor of Science in Software Engineering & Management

📅 Oct 2014 - April 2018

- Thesis: Modeling And Evaluating CPU Caches In Software (QEMU)

## COURSEWORK

- M.Sc. degree program:** Knowledge Discovery & Data Mining • Machine Learning • Deep Learning  
Security Aspects in Software Development • Verification & Testing  
Web Technology • Expert Systems  
General Management & Organization • Change Management  
The Art of Feedback • Intercultural Social Competence
- B.Sc. degree program:** Data Structures & Algorithms • Statistics & Probability  
Linear Algebra & Analysis • Software Maintenance • IT Security & Networking  
Operating Systems • Computer Vision & Graphics • Computational Intelligence

## 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  
TensorFlow (Keras) • PyTorch • OpenCV • ROS
- Tools:** Docker • VirtualBox • KVM/QEMU • Vagrant • Conda • Pyenv(-virtualenv) • Poetry  
Git • Jira • Gitlab CI/CD • Vim • Tmux • POSIX commands and terminal utilities
- Communication:** English (C1/2-level) • German (native)

### SKYSPECS

📍 Graz, Austria & Ann Arbor, MI

Data Scientist

📅 July 2023 - present

- Develop and extend algorithms to address critical challenges in the wind industry, such as the production loss assessment, pitch misalignment detection, performance analysis, and more, focusing on broad applicability and efficiency for large wind farm portfolios.
- Work primarily in Python to conduct data manipulation, analysis, visualization, and interpretation of large-scale time-series data in combination with other data sources such as meteorological data, error, or maintenance logs.
- Use statistical and machine learning methods to analyze, classify, cluster, and interpret SCADA (Supervisory Control and Data Acquisition) data of individual wind turbines, in order to enhance operational efficiency by identifying anomalies and performance issues.
- Lead the transition of final prototypes to production, including big-scale testing and integration into the existing software infrastructure, for monthly execution across more than 6000 client wind turbines.
- Enhance the engineering process by leading the introduction of a novel Python microservice architecture that serves various statistical and other computations as RESTful APIs.

### JOANNEUM RESEARCH

📍 Graz, Austria

Research Assistant

📅 Oct 2020 - June 2022

- Engineer computer vision applications to enhance real-time object detection and pose estimation capabilities of a drone, using only imagery from its calibrated camera.
- 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.
- Configure containerized solutions for NVIDIA Jetson embedded computing devices.
- 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

📍 Graz, Austria

Junior Developer

📅 Aug 2018 - April 2019

- 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 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

📍 Graz, Austria

Institute of Applied Information Processing and Communications | Intern

📅 Aug 2017 - Nov 2017

- 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.

### 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.