

Max NEUWINGER

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SKILLS

Programming Languages	Python 4/5, C++ 3/5, Java 3/5, SQL 3/5, JavaScript 2/5
Machine Learning & Data Science	PyTorch 3/5, SciKit-Learn 3/5, Pandas 3/5
Web Development	React.js, Express.js, Flask, CSS, HTML
Tools and Platforms	Git 3/5, Linux 3/5, Docker

EDUCATION

2024 – 2026	ETH Zurich - Master of Science in Computer Science Major in Machine Intelligence , Minor in Data Management Systems Relevant Coursework: Probabilistic AI, Algorithms Lab, Big Data
WINTER 2023	University of Southern Denmark (SDU), Odense, Denmark - Erasmus Scholarship Exchange Semester
2021 – 2024	Friedrich-Alexander University Erlangen-Nürnberg - Bachelor of Science in Computer Science Co-authored research paper with Prof. Dr. Riehle: <i>A Systematic Literature Review of Common Beginner Programming Mistakes in Data Engineering</i> Relevant Coursework: Algorithms and Data Structures, Software Development in Large Projects, Algorithms for continuous Systems

EXPERIENCE

2024	Student Researcher at Fraunhofer IISB - Python, React, MQTT, Express.js, Authentication Developed a website for remote control and livestreaming of the Evolonic drone base station.
2021 – 2024	Computer Vision Specialist at Evolonic Part of a multidisciplinary student team advancing drone-based early forest fire detection through AI-driven autonomy. Collaborated with Fraunhofer IISB and other industrial partners. Key Contributions and Achievements: <ul style="list-style-type: none">- Maintained and enhanced YOLO-based smoke detection models, handling data collection, processing, labeling, and training on Fraunhofer GPU clusters. Conducted comparative analysis on YOLO variants and tuning parameters.- Assisted development of award-winning ground-target detection models for the 2022 North Flying competition in Hamburg.- Developed a multi-fire tracking system for simultaneous monitoring and prioritization of multiple fires.
SEP 2019	Research Intern in Physical Chemistry at FAU Collaborated with a doctoral research team to investigate and analyze material surfaces using a Scanning Electron Microscope. Gained exposure to scientific research methods and data analysis techniques.

PROJECTS

2024	Bachelor Thesis: Numerical Integration of Local Stiffness Matrices on Sparse Grids - C++, CMake, Matplotlib Implemented high-dimensional numerical integration capabilities using sparse grids library in C++. Evaluated and optimized multiple integration methods to enhance computational speed and accuracy. Integrated new functionalities into existing software. Link to Thesis
2024	IEEE ICRA Robotics Competition, Evolonic Student Group (Tokyo, Japan) - Python, Finetuning, VLM, Pytorch Selected as one of only six teams globally to participate in the IEEE ICRA Robotics Competition in Japan. Contributed by fine-tuning an Llama 3.1 model on custom ROS2 Humble dataset for development support, building a custom line detection and avoidance model with YOLOv8 (PyTorch), and deploying the LLAVA VLM model on Nvidia Jetson for autonomous decision-making. Recognized by the event organizers, receiving job offers from the CEO of the german startup leading the competition.

COURSES AND CERTIFICATES

2024 – 2026	German Academic Scholarship Foundation - 0.4% Acceptance Rate Awarded a prestigious scholarship from the Studienstiftung des Deutschen Volkes for outstanding academic achievements and potential. This scholarship supports my academic endeavors and offers opportunities for personal and professional development through exclusive seminars, networking events, and financial assistance. Attended a 1-week intensive Natural Language Processing course in Ljubljana as part of a summer academy organized by the foundation.
2019 – 2020	FAU Unitag Program for Highly Gifted Students Selected for an elite Bavaria-wide program, exclusively designed for top-performing students from Highschools. Engaged in interdisciplinary lectures and hands-on sessions, gaining valuable insights into advanced research methodologies and analytical skills.