Fabian Peddinghaus

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Education

Stanford University — Sep. 2022 – Dec. 2022
Visiting Student Researcher with Subhasish Mitra and Priyanka Raina — *Stanford, United States*
Compilation flow for deep learning accelerator

Technical University of Munich — Apr. 2021 – Feb. 2023
M.Sc. Electrical and Computer Engineering, current grade 1.0, top 2% — *Munich, Germany*
Focus on computer architecture and machine learning

Technical University of Berlin — Oct. 2017 – Mar. 2021
B.Sc. Computer Engineering, grade 1.3, top of class — *Berlin, Germany*
Dissertation on spectrum sensing for nanosatellites

German Academic Scholarship Foundation — Feb. 2020 – Present
Scholarship, awarded for outstanding academic potential to 0.5% of students in Germany

Experience

Graduate Research Assistant — Oct. 2021 – Sep. 2022
TU Munich, Department of Electronic Design Automation — *Munich, Germany*

- Ported ARM's CMSIS-NN to RISC-V using the Vector V and Packed P extensions
- Integration of RISC-V Vector compute kernels with TensorFlow and TVM
- Worked on embedded ML-based signal and speech processing
- TA for course: Embedded System Design for Machine Learning
- TA for course: Embedded Systems and Security

Undergraduate Research Assistant — Oct. 2018 – Mar. 2021
TU Berlin, Department of Flight Mechanics and Flight Control — *Berlin, Germany*

- Developed a novel guidance and control system (hard- and software) using distributed wireless control algorithms
- Conducted research into state estimation and real-time control
- TA for course: Aviation and flight control software

Working Student Software Developer — Apr. 2018 – Aug. 2018
HeyCar — *Berlin, Germany*

- Developed IoT customer endpoint with database integration

Embedded Software Developer — May 2013 – Sep. 2017
CooperCopter GmbH — *Hamburg, Germany*

- Worked on software stack for novel drone propulsion system (2nd at German Aviation Innovation Award, 2017)
- Developed flight control and power management solutions for unmanned aerial systems

Projects

IFSys Student Initiative | *Technical lead for university student project* — Oct. 2018 – Present

- Development of unmanned aerial system for search and rescue
- In-house hard- and software development
- Presentations, public relations, exhibitions, and events

Biped Robot | *Developed as a side project* — Feb. 2018 – Apr. 2018

- Wrote 12 DOF humanoid estimation and control algorithms
- Low-level hardware driver for IMUs and servo motors

Technical Skills

Languages: C, Python, C++, Assembly (RISC-V, ARM, MIPS), VHDL, Java, Haskell
Libraries and Platforms: ONNX, TensorFlow Lite, PyTorch, Vector intrinsics (x86 and RISC-V), TVM, NumPy, SciPy, CUDA, OpenCL, OpenMP, PyWavelets
Developer Tools: CMake, Make, Git, Unity, Google Test, Bash, Linux