Markus Heimerl

Embedded Systems Engineer

Contact

contact@markusheimerl.com

markusheimerl

Technical Skills

Programming
C, Python, HDLs

Architectures
ARM, RISC-V

Signal Processing
State Space Models, Kalman Filters

Hardware
PCB, FPGA

Safety-Critical
AUTOSAR, MISRA C

Protocols
SPI, CAN, ETH, TCP/IP

Languages

German
Native Speaker

English
C1 Level (TOEFL iBT 105/120)

Courses

Biomolecules and Cell
University of Tübingen (2023)

Data Literacy
University of Tübingen (2023)

Advanced Parallel Computing
University of Hagen (2024)

Professional Summary

Embedded Systems Engineer with strong background in signal processing, bare-metal firmware development, and hardware-software co-design.

Professional Experience

Automotive Developer May 2024 - Present
intive GmbH, Regensburg

- Developing automotive ECU network diagnostic and visualization tool
- Leading refactoring effort to improve performance and maintainability

Software Development Engineer Jul 2023 - Dec 2023
Vector Informatik GmbH, Regensburg
Contributed to bootloader development with OTA capabilities for automotive MCUs

Digital Design Teaching Assistant Mar 2022 - Sep 2022
Regensburg University of Applied Sciences
Supported students in digital design course and evaluated exercise sheets

Technical Projects

Real-Time Flight Control System 2021 - Present
github.com/markusheimerl/quad

Autonomous quadcopter with custom PCB, bare-metal firmware, and state space model for IMU sensor fusion and motor control

RISC-V Processor Implementation 2022
Bachelor's Thesis

Implemented RV32I processor in VHDL with VGA controller

Education

B.Sc. Computer Engineering 2018 - 2022
Regensburg University of Applied Sciences
Embedded Systems, Signal Processing, Real-Time Control, Computer Architecture

Volunteering

Event Organizer Mar 2019 - Aug 2019
TEDxOTHRegensburg

- Implemented online ticketing system for seamless attendee experience
- Recruited speaker and contributed to sponsorship acquisition efforts