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, I2C, UART, CAN

Languages

German
Native Speaker

English
C1 Level (TOEFL iBT 105/120)

Courses

Aerial Robotics
University of Pennsylvania (2021)

Biomolecules and Cell Biology
University Tübingen (2023)

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 - Dec 2022
OTH Regensburg
Supported students in comprehensive 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
OTH Regensburg
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