# 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)

## Certifications

**Aerial Robotics**
University of Pennsylvania (2021)

## 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 safety-critical 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