Anthony James Munns

Curriculum Vitae - james.munns@gmail.com

I am a software engineer focused on building the right solution for the right challenge. I have worked on platforms ranging from real time and safety critical software developed in C, to rapidly prototyping IoT use cases developed in weeks. By working with a wide range of technologies, features, and limitations, I am always pushing the limits of my skills, and willing to adapt the best design for the task at hand.

I have an easygoing personality, and enjoy diving deep into technical knowledge, as well as relating this knowledge in an easy to consume format for customers, stakeholders, and management.

Areas of focus

- **Embedded Systems**
  - Safety critical and real time systems in the fields of Avionics and Gas Detection
  - Rapidly prototyped bare-metal systems for IoT use cases
- **Linux Systems**
  - OpenWRT, Debian, and Yocto based systems for non-real time embedded platforms requiring internet connectivity for domain specific usage
  - Orchestration and automation of tasks ranging from containerized web services to data parsing and management
- **Programming Languages**
  - C, Python, Rust, C++, Bash

Work Experience

Embedded Systems Engineer   01.2016 - Current
Relayr GmbH   Berlin, DE
- Developed multiple small-batch (10s-100s of units each) Environmental Sensor prototypes based on OpenWRT and bare-metal platforms, using PoE and Sub-GHz communication technologies for Building Management use cases
- Developed a Linux based Sub-GHz Border Router platform for use with Low Power embedded sensors
- Developed retrofitting prototype for high-end espresso machines used in fleet monitoring use cases
- Met with customers for requirements gathering, deployment, and servicing of IoT based prototypes

Senior Staff Engineer   10.2014 - 12.2015

Mine Safety Appliances GmbH   Berlin, DE

- Led the improvement of safety critical software development process using modern Static Analysis tools, Code Review techniques, Test Automation, Continuous Integration tools, and Software Testing practices.
- Integrated industry standard tools to improve developer workflow and software quality
- Developed a Hardware in the Loop (HIL) testing platform for Continuous Integration Testing of firmware on physical hardware devices

Software Engineer 2   05.2011 - 05.2014

Garmin International   Kansas City, KS, USA

- Developed, Tested, and Certified Real-Time embedded software for TAS, TCAS I, and TCAS II traffic systems for DO-178B Compliance, including software development in C and ARM Assembly, and testing development in C, C++, and Python
- Communicated directly with OEM customers and regulatory agencies to address concerns and questions regarding systems level working of products
- Worked with a small team to replace costly proprietary tools and hardware with in-house solutions

Education

Missouri University of Science and Technology   May 2011

B.S. Computer Engineering   Rolla, MO, USA

Personal Projects

In my personal time, I take time to explore new technologies that interest me, writing or speaking about areas I am knowledgeable in or currently learning, and contribute back to open source projects. My most recent work in these areas include:

- teensy3-rs - An autogenerated set of bindings in Rust for the Teensy3, a Kinetis ARM Cortex-M based development board
- coap-rs - A CoAP library written in Rust
- Constrained Devices and the Internet of Things - A one hour introduction to embedded systems for non-engineers