

Matthew Gramlich

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Education

Bachelor of Science, Computer Engineering: West Virginia University
Bachelor of Science, Electrical Engineering: West Virginia University

Skills

Real-Time Embedded Firmware Design (uC/OS, FreeRTOS, VxWorks)
Embedded busses: I2C, SPI, I2S, UART
Xilinx Kintex Ultrascale, Zynq-7000 FPGA SoM Development
Proficient in C, C++, Java, LabVIEW, Robot Operating System (ROS)
Experienced with Python, Verilog, SystemVerilog, Vivado IDE
Experienced in Electrical System debugging

Relevant Experience

Capture Systems – CW Systems Engineer October 2020 - Present
Pro Unlimited @ Facebook – Pittsburgh (PA)

Varied role with impact across multiple teams and disciplines. Championed multiple efforts to resolve system stability issues and developed software tools for maintenance capabilities. Technical POC on multiple future looking projects that add additional capabilities to capture system's networks, sensor systems, and new body scale systems.

Advanced Processors – Software Engineer April 2019-October 2020
Lockheed Martin Missiles and Fire Control – Orlando (FL)

Fulfilled multiple roles in systems integration of new hardware product into longstanding DoD contract. Roles included FPGA firmware debugging, software interface design for hardware integration, and operating system driver development.

Embedded System Programmer and ROS Software Programmer Aug 2014-December 2018
Interactive Robotics Laboratory - West Virginia University - Morgantown (WV)

Embedded Firmware designer for the WVU Cataglyphis rover. Supported many land and air based research vehicle computing systems. Developed ROS enabled software systems for communication and application abstraction.

Advanced Processors – Software Developer - Intern May 2018-Aug 2018
Lockheed Martin Missiles and Fire Control – Orlando (FL)

Primary Software developer for design and implementation of new maintenance capabilities for a longstanding DoD defense program.

Lead RockSat-X Payload Firmware and FPGA Engineer Jan 2017-Aug 2017
West Virginia University – NASA IV&V - Morgantown (WV)

Utilized Xilinx Zynq-7000 FPGA SoM to show viability of solid state particle detectors in outer atmosphere. System implemented custom IP cores to analyze noise floor, capture particle events, and transfer event data to Debian environment for storage. Provided in-flight data logging and radio relay system for four independent, asynchronous serial lines for other experiments.

Lead NASA Robotic Mining Challenge (RMC) Software Engineer Sept 2016-June 2017
West Virginia University - Morgantown (WV)

Directed the efforts of a software team of four for the 2017 WVU RMC robot. The delivered system autonomously completed competition with a possibility of teleoperation for dangerous situations.

Lead RockSat-C Payload Firmware Engineer Jan 2016-June 2016
West Virginia University - Morgantown (WV)

Developed computer system for a continuous 2 KHz sample rate of on-board Langmuir Probe and precision Accelerometer. System multi-tasked with data movement between data storage and data recording tasks.

Sounding Rocket Payload Flight Software Programmer Jan 2015-Dec 2015
West Virginia University - Morgantown (WV)

Lead Embedded Firmware designer for the Undergraduate Sounding Rocket Instrumentation Project (USIP). This system launched aboard the MUSIC sounding rocket out of Wallops Flight Facility, VA on March 1, 2016.

Awards

- 2016 NASA Centennial Sample Return Robot Challenge- 1st Place- 11 Points
- 2015 NASA Centennial Sample Return Robot Challenge- 1st Place- 3 Points