Matthew Gramlich

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Education

Bachelor of Science, Computer Engineering: West Virginia University — Expected Fall 2018
Bachelor of Science, Electrical Engineering: West Virginia University — Expected Fall 2018
Major (Overall) GPA — 3.50 (3.35) / 4.00

Skills

Real-Time Embedded Firmware Design (uC/OS, FreeRTOS, VxWorks)
Xilinx Zynq-7000 FPGA SoM Development
Multi-Threaded and Multi-Tasking Computer System development.
Proficient in C, C++, Java, LabVIEW, Robot Operating System (ROS)
Experienced with Verilog, SystemVerilog, Vivado
Experienced with Git, QT, MATLAB, Microsoft Office products

Relevant Experience

Embedded System Programmer and ROS Software Programmer — Aug 2014-Present
Interactive Robotics Laboratory - West Virginia University - Morgantown (WV)
- Lead Embedded Firmware designer, using uC/OS, for the WVU Cataglyphis rover which competed in the 2015 and 2016 NASA Centennial Sample Return Robot Challenge. Cataglyphis finished 1st place in both attempts. The embedded system controlled all inertial navigation sensors with redundant embedded computers. Navigation results were returned to the primary computer via redundant serial and ethernet links.

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 - 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.

Capability Development Intern-RIPI — May 2014-Aug 2014
NASA IV&V - Fairmont (WV)
- Working in a team of five, a Computer Vision test bed was developed and demonstrated for verification of computer vision algorithms. Project was presented to the NASA IV&V, NASA Godard, and NASA Headquarters facilities.

Awards

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

References Available upon request