David Miller

1136 Elliott Ave, Madison Heights 48071
Phone: 843-743-4318 | Email: DavidMillerEngineer@gmail.com

COMPUTER ENGINEER

Seeking Software Engineering Position

Graduate with BSEE, BSCE, and EIT. Multi-disciplinary skill sets in both hardware and software engineering. Experienced in working with multi-disciplinary teams and communicating with them verbally or through technical writing. Experienced with applying the software development lifecycle to successfully design and implement solutions to be used as part of a simulation environment.

Education / Certification

Montana State University, Bozeman, MT
Bachelor of Science in Electrical Engineering, 12/2014
Bachelor of Science in Computer Engineering, 12/2014
Minor of Science in Computer Science, 12/2014

DoD Security Clearance
Active Secret, 01/2016

Experience

US Army DEVCOM GVSC, 2020-2022
DCS Corporation, 2019-2020
Worked as a software engineer with a team of engineers on Continuous Autonomy Simulation Test Laboratory Environment (CASTLE), Crew Optimization & Augmentation Technologies (COAT), and Virtual Prototyping (VP) efforts at the Ground Vehicle Systems Center (GVSC). Projects followed an AGILE development life cycle, used Git for source control, and used a pull request system to ensure code quality.

VP:
Project aimed to provide a toolset of plugins that could be used in a variety of simulation environments driven by the Unreal Engine. ***Key Contributions:*** Refactored existing plugins from COAT and CASTLE to add flexibility for working with all current and future projects, designed and implemented test plans, generated instructional documentation and user manuals.

COAT:
Project used the Unreal Engine to provide a simulated battlefield environment that supported virtual experiments in which soldiers controlled a Man Controlled Vehicle (MCV), linked to a motion platform, and two Remote Controlled Vehicles (RCV). ***Key Contributions:*** Worked with team to develop and test plugins used to provide functionality to a simulation environment including control and communication for weapons and vehicles. Supported virtual experiments by overseeing biometric data collection, as well as providing stimulus to the soldiers by performing OPFOR activities.

CASTLE:
Project centered around designing and developing software to test a third-party autonomy kit (Akit) through simulation in a virtual environment (ANVEL). ***Key Contributions:*** Worked with a team to develop a plugin that monitored the current simulation state and compare it to the Akit's reported state. It used this information to log whether a test passed or failed. This allowed tests to be run continuously without being monitored, while still providing feedback on the stability of an Akit.

Tru Simulation and Training (Textron), 2015-2019
Worked with multiple teams of engineers to develop software for government funded B-1 flight training simulators. Projects centered around adding functionality to pre-existing software and integrating these changes with hardware/software solutions from other companies such as Lockheed Martin, Boeing, Northrop Grumman, and Rockwell Collins. Projects used a mixture of waterfall and agile development strategies to work across multiple platforms (Red Hat Enterprise Linux, Windows 7, Windows 10). Development used a variety of software languages including C, C++, and FORTRAN to interface with ADA hooks in Boeing's B-1 OFP Avionics Flight Software.

New Simulated Weapon:
Added the Long Range Anti-Ship Missile to the B-1 Weapon System Trainer. Activities included simulating the missile to 1553 bus interface and responding to Boeing Operational Flight Program and Multi-Functional Displays. Simulation includes weapon initialization release, and fly-out operations with optional Distributed Mission Operation (DMO) PDUs. Supported testing though customer sell-off with zero discrepancies. Supported software installation and testing activities at Dyess and Ellsworth Air Force Base.

Radio Serial Communication:
Modified RS-232/422 interfaces to work with legacy radio hardware. Troubleshooting required use of software test programs and monitoring of hardware port signals with oscilloscope to determine undocumented legacy component specifications.

Link-16 Messaging:
Developed software to handle complex handshaking between host and MIDS system involved in Command and Control processes. These messages were exchanged between the ownship and simulated entities over DMO simulated Tactical Data Link.

Technology Summary

C, C++, Unreal Engine, Git, Python, Batch Script, Assembly, VHDL, Real-Time Operating Systems, Firmware, Arduino, Linux, Bash, MATLAB, DMO, MIL-STD-1553, MIL-STD-6016, Link-16, RS-232/422, GitLab, GitHub, BitBucket, Jira, Confluence