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Summary

A career deeply involved in product development using some of sophisticated embedded avionics systems and on cross platform computer environments. Technical leadership which is routinely leveraged against the most complex program tasks. Expertise with tools and environments that span a wide gamut of languages, platforms, and technologies. C/C++/Objective C, scripting (Perl,Python,javascript,shell); Unix/Linux,Microsoft, Realtime OSes, as well as Web and mobile. Strong Electrical Engineering skills to meet hardware developers and their issues far beyond halfway.

Experience

L3 Technologies Display Systems (via Custom Micronics)

L-3 Communications Display Systems – F-35 Joint Strike Fighter cockpit display: Participating in software development, software requirements, software integration. Software development in Green Hills Software INTEGRITY, using C and C++ on a PowerPC architecture (Multi 4.0.5, 4.2.3). Requirements management and traceability using Telelogic DOORS. Microsoft Visual C++, Labview, Perl, Subversion, LynxOS, ATI OpenGL driver.

L3 Technologies Avionics Systems (via Custom Micronics)

Embedded Development of SmartDeck integrated flight display and control system - Team member across many functional areas of the flight display system, including pilot interface development (OpenGL), aircraft navigation, and external aircraft interface consolidation. Developing in C and C++ using Green Hills Multi

development environment and INTEGRITY (4.0.8, 4.0.9, 4.0.10) real-time operating system on a multi-processor MPC8245 hardware platform. Participated in requirements capture and design formalization to satisfy FAA/RTCA DO-178B level B certification.

Applied Innovations (via Custom Micronics)

Team member on a project by Applied Innovations, a developer of specialized computer room equipment, developed a custom programmable Ethernet switch to replace functionality where they were reselling Cisco IOS based switches. Written in C++ and using the public domain Adaptive Communication Environment (ACE) libraries, implemented a Ethernet switch which was largely Cisco IOS syntax compatible.

Controlled Negotiator and Sales Group, Jim Camp Start With No (via Custom Micronics)

Website development using Apache, SSL, Java, Javascript and Postgres for a decision based negotiation training system based on the book “Start with No” by Jim Camp.

ADB Airfield Solutions / Siemens (via Custom Micronics)

Part of a team brought in to implement an airfield lighting control system for the Brussels International Airport. Our task was to implement the low-level control to the airport lighting circuits, which included gross circuit level control and individual lamp control. This was done using a Siemens built circuit controller (SCC) that includes discrete, RS422, RS485, and Ethernet hardware. Created a custom port of linux as our foundation for the SCC. The application interfaced to the higher-level control system via a TCP/IP based connection. It includes modules for network interfacing, constant current regulator control, discrete I/O control, individual lamp control (BRITE), and process management. All development was done in C and used socket connections internally for inter-process communications.

Goodrich (L3 Technology Avionics Systems) (via Custom Micronics)

Development of SkyWatch HP
Due to our experience with the development of BF Goodrich's previous Collision Warning Systems (TCAS791 and Skywatch), BF Goodrich asked us to come back to help in the development of their latest Collision Warning System, SkyWatch HP. This effort re-evaluated every aspect of the TCAS/Skywatch design. It made use of Precise MQX, an off-the-shelf RTOS. Development was primarily done using Diab C, Precise MQX Real Time OS, and SDS Singlestep Debugger. Data analysis was done in Visual C++ and Perl.

Development of Avionics Workbench
Worked on a team which developed a Windows program in which BF Goodrich could simulate or replay data from various avionics sources. We use this as part of our analysis tools when analyzing flight data. We can plot various captured data and replay it through new tracking algorithms to see whether changes would improve performance or to look for bugs. Development was done with Microsoft VC++ 6.0.

Skills:

C, C++, Objective C, Assembly (Power PC, Intel), Windows, Linux, Embedded Linux, UNIX, GCC, GDB, Clang, PC-Lint, Green Hills INTEGRITY RTOS, GHS BSP, JTAG Debugging, Precise MQX, Perl, Python, Labview, Java, DO-178B, Lockheed SEAL Certification, MISRA, Government Programs, Code Coverage, Static Analysis, PowerPC, ARM, ATI, TCP/IP, Avionics, Airfield, Embedded Software, JSF, F-35, TCAS, OpenGL 2.0, Device Drivers, Firmware, I2C, Doxygen, Subversion (SVN)

Education:

Bachelor of Science in Electrical Engineering at The Ohio State University. Post Graduate work towards Masters Degree.