RESUME'

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EDUCATION

University of Central Florida, Orlando, FL
B.S. Civil Engineering

University of Central Florida, Orlando, FL
B.S. Electrical Engineering

Central Florida Community College, Ocala, FL
A.S. Microcomputer Technology

SUMMARY

Software Test Engineer, extensive experience in the specification, design, implementation, test, V & V, release, and sustaining of microprocessor based systems. Experience includes: medical monitors, business servers, laser range finders, avionics, digital data links, telephone switches, and satellite video communications.
Recent projects have utilized:
X86 - 486 microprocessor programmed in “C” and assembler
Digital Signal Processors - Analog Devices SHARC and 2181 family DSPs
Windows Programming - "C++" and Visual BASIC in Visual Studio
Linux shell script programming for embedded test applications
Numerical Analysis – MathCAD 12, MATLAB Release 13, Maple 11

WORK EXPERIENCE

8/2006- Silicon Optix, Inc. Teranex Division
8/2007 Orlando, FL Embedded Software Consulting Engineer

Performed embedded operating system maintenance and configuration to enable legacy real-time software to be re-used on currently available hardware platforms. Replaced drivers for video graphics adapter, fast Ethernet adapter, and touch screen controller. Wrote upgrade scripts for backward compatible field software upgrade of 4000 existing products in the field. Corrected timing problems associated with switching to faster CPUs. Performance tested the upgrades to assure that the product still correctly performed its original video format conversion functions. Wrote software documentation, manufacturing process sheets, and configuration control processes. Repeated the above on three Teranex video computer product lines. Utilized a proprietary Linux type operating system (QNX), Sun/Solaris workstations, PCs, and SAMBA server for internetworking.

11/99- Invivo Corporation
3/2006 Orlando, FL Software Test Engineer

Tested and integrated OEM supplied subsystems into the company’s core medical monitor product by designing interface protocols, resolving system software timing issues, gaining vendor compliance with specifications, and supporting FPGA development with a software test capability.

Incorporated many process improvements to optimize yield and production capacity. Developed and maintained calibrator software in Visual BASIC. MathCAD was used extensively for algorithm development and performance modeling the product, the calibrator, and the production workflow.

Developed a modular OEM version of the company’s gas monitor product by designing a DSP-based hardware module, re-hosting existing high-level code, and developing new low-level functions for data acquisition, system timing, and communications with host CPU. Designed the computing hardware based on an Analog Devices SHARC family DSP (Digital Signal Processor). Developed embedded software in “C” and DSP assembler.

Designed application software for a medical monitor product in “C” and assembler in a Visual Studio Visual C++ environment. The embedded target processor was an Intel 486 variant in an embedded PC-like architecture. Employed a proprietary real-time operating system (RTOS).

4/97- Rockwell International, Collins Commercial Avionics
6/99 Melbourne, FL Contract Firmware Test Engineer

Performed software verification and validation activities for an instrument landing system used to land commercial airliners such as the Boeing 737-400. Wrote, reviewed, and executed firmware tests. Performed CPU loading analysis. The target hardware is a digital radio based on an Analog Devices 2181 DSP. Used "C" and assembly, ARINC 429 protocol, VAX/VMS, and VAX CMS for configuration control.

Designed and coded test scripts in "C" in support of the software verification of a collision avoidance system for a new model Boeing jet. The software under test was written in "C" and run on two Texas Instruments DSPs.

6/96- Intel Corporation, Enterprise Servers Group
1/97 Beaverton, Oregon Contract Firmware Test Engineer

Unit tested real-time embedded software in five 8051 family micro-controllers that make up the server management subsystem of Intel dual-CPU Pentium Pro based enterprise servers. Subsystems tested included SCSI RAID disk system, power management, thermal management, LAN-based remote control subsystem. Wrote a total of seven unit test plans. Designed and coded software in "C++" to automate regression testing. Used Philips I2C bus, Intel Intelligent Management Bus, Microsoft C++, PVCS version control.

2/96- General Motors, Delco Electronics
3/96 Reynosa, Mexico Contract Software Engineer

Developed production test software in Borland "C" to test 1997 Cadillac anti-lock braking system (ABS) controllers. Used GM CLASS2 protocol. Developed a system for prioritized error reporting to give the operator only the reports he wants and needs.

11/95- Schwartz Electro-Optics
2/96 Orlando, FL Contract Software Engineer

Designed high-speed real time assembly language software to detect and classify multiple vehicles within the detection zone of a scanning laser range finder. Utilized INTEL 80C196NU, Borland "C" for algorithm development, Nohau emulator. Provided technical input to the California Institute of Technology Jet Propulsion Laboratory regarding the development of a new traffic signal data communications protocol standard (NTCIP Objects Definitions).

12/93- Harris Transcomm (formerly Air Traffic Control Systems Division)
11/95 Melbourne, FL Contract Software Engineer

Design, code, test, and debug telephone call processing software for a customized Harris 20/20 switch. Resolve problem reports, prepare review packages for code reviews, code unit test reviews. Performed configuration management using VAX CMS (code management system) in a multi-programming environment. Project involved analyzing large volumes of existing PLM code (336,000 lines total).

9/92- Cummins Electronics, Inc.
12/93 Columbus, Indiana Contract Systems Engineer

Performed software requirements analysis for diesel engine controllers using structured methods and CADRE Technologies Teamwork CASE tools. Wrote software requirements specifications for cruise control feature and two automotive data links. Created the system data dictionary. Utilized Linux shell script programming to parse data dictionary elements out of about 100 specifications.

1/91- Intellon Corporation
9/92 Ocala, FL Consulting Engineer

Assisted a startup company to get their proprietary datalink protocol adopted as the new EIA standard for power line communications by designing and coding high speed, real-time software to implement the first fully functional CEBus datalink. The CEBus datalink is a contention mode, packet protocol with special provisions to use spread spectrum chirp as the physical layer modulation format. Utilized the "C" language and Intel 80196 assembly. After capturing the EIA CEBus standard, designed the CPU (INTEL 80C196KB) and datalink software for a cost reduced evaluation module to demonstrate the new technology to OEMs. Did a preliminary timing analysis to establish the feasibility of the proposed CPU configuration to support the intended application software prior to coding.

3/90- Electronic Developments
10/90 Sanford, FL Consulting Engineer

Designed an INTEL 8051 based CPU for an equipment control application. Wrote a human interface (in 8051 assembler) for an alphanumeric paging data receiver for a prototype demonstration to Bell Atlantic.

5/88- North American Philips Corporation, Circuit Assemblies Division
3/90 Tampa, FL Contract Firmware Engineer

Managed the software development effort associated with the product development of a highly integrated intercom based product for NUTONE. The product combines a selective call intercom with a two-line speakerphone, an answering machine, a tape player, an AM/FM radio, and an alarm clock. The software was written in 8051 assembly language. The system is based on a custom contention mode protocol. Duties included planning, recruiting, hiring, and supervision of six programmers.

1/87- Stromberg-Carlson Corporation
5/88 Lake Mary, FL Senior Engineer

Produced an ASIC design that performs the time slot interchange function in Stromberg-Carlson digital central office switches. This 11,000 equivalent gate design was correct at its initial release.

Wrote the specification for a circuit board that utilizes the above mentioned ASIC to perform time-space-time switching of 1024 channels of PCM data. This circuit board can be interconnected with up to 15 similar boards to form a 16,384 channel matrix switch. Designed 17 ALTERA EPLDs.

6/81- Harris Satellite Communications Division
12/86 Melbourne, FL Senior Engineer

HARRIS SOFTWARE DEVELOPMENT EXPERIENCE

Harris supplied the earth station network over which the NBC television network distributes its video feed to affiliates. The master station required a network control terminal over which all 176 stations in the network can be controlled. Designed the human interface for the network maintenance terminal. Developed a generalized command line parsing algorithm that accepts one line commands but automatically drops into prompt mode if a command is found to be invalid. A command logging function assists in the development of macro-commands that can enable the entire network of 176 earth stations to change satellites and re-tune by submitting a command script. The concept of state table driven software was utilized. Generated code in PLM-86 on an INTEL RMX host. Produced software documentation to accepted standards.

HARRIS NEW PRODUCT DEVELOPMENT EXPERIENCE

Designed the monitor and control subsystem of the HARRISAT ALPHA earth terminal (a Ku band data terminal). Developed hardware and software interface specifications, designed the CPU, designed a redundant serial bus interface, designed analog data acquisition circuits, and circuits that isolate faults in RF equipment. Upon completion of the hardware design, programmed this product in assembly language to comply with specified customer interfaces. Responsibilities included technical liaison with customers, and system testing for compatibility with customer software.

Managed the product development of the HARRISAT Protection Switch. This microprocessor based device enables two of the HARRISAT ALPHA earth terminals mentioned above to operate in a one-to-one redundant configuration. Performed the hardware and software development, led others in the design of mechanical packaging. Building upon previous designs, this project was taken from concept to working model in four weeks. The first two finished products were shipped eight weeks after the start of development. Also designed five other redundancy control switches, one for upconverters two for downconverters, one for low noise converters, and one for satellite modems.

Managed the development of a data-link protocol converter to act as a gateway between a TANDEM Computers Inc. packet switch and a Harris proprietary network for controlling satellite equipment.