NICHOLAS J. GOOTE

www.nickgoote.com Hudsonville, MI 49426
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SUMMARY

A software project engineer experienced in the areas of embedded software planning and development.

EDUCATION

Master's Degree – Electrical and Computer Engineering – Digital and Computer Systems
December 2010
Grand Valley State University, Allendale, Michigan
Cumulative GPA: 3.86 (4.00 scale)

Bachelor's Degree – Electrical and Computer Engineering
Minor in Mathematics
May 2006
Calvin College, Grand Rapids, Michigan
Cumulative GPA: 3.56 (4.00 scale)

COMPUTER PROFICIENCIES

Programming Languages – Significant Experience: C, C++
Programming Languages – Some Experience: LISP, X86 Assembly, VHDL, Verilog, Perl
Operating Systems: uC/OS-II, FreeRTOS
Specific Applications: GNU GCC, GNU Make, Dimensions, DxDesigner, PSoC Designer, TestTrack Pro, Microsoft Project

WORK EXPERIENCE

Software Project Engineer at Gentex (March 2011 – present)

- Manage the requirements, implementation, and testing of software developed for several rear view mirrors and OEMs. The software was responsible for CAN communication, rear camera displays embedded into the mirror, electro-chromatic auto-dimming circuitry, and SmartBeam technology.

Faculty at Calvin College (January 2010 – present)
Engineering204L – Circuit Analysis and Electronics Lab

- Taught a Circuits Analysis and Electronics lab.

Project Manager at DornerWorks (November 2009 – March 2011)
Contracting at Gentex – Software Project Engineering

- Managed the requirements, implementation, and testing of software developed for several rear view mirrors and OEMs. The software was responsible for CAN communication, rear camera displays embedded into the mirror, electro-chromatic auto-dimming circuitry, and SmartBeam technology.
- Acted as project manager for DornerWorks' employees on-site at Gentex.

GE Aviation C-130 Aviation Modernization Program

- Managed a team of 3 people doing DO-178B Tool Qualification. The tools were written in C and used to parse and generate loadable items, partition load maps, and loadable software airplane parts.
- Managed a team of 3 people that fixed and verified problem reports. This consisted of fixing source code bugs, updating documentation, and verifying similar changes made for other problem reports.

GE Aviation Common Computing System for Boeing 787

- Managed a team of 4 people doing DO-178B peer reviews of source to object analyses of C and Ada operating system code. This consisted of reviewing the analysis and trace for each line of object code per the customer's process, working with the analysis team to get issues corrected, producing a work instruction detailing how the review was performed, and reviewing final results documents.
- Managed a team doing the DO-178B Data and Control Coupling analysis of several parts of the operating system. Performed manual analysis to identify data and control couples and wrote requirement based tests in C to fill data and control coupling testing gaps.
- Managed a team of 10 people in developing and maintaining DO-178B Level A high level requirement based tests for the Avionics Full-Duplex Switched Ethernet, Board Support Package, File System, Health Monitor, and Bulk IO drivers. The 9000+ tests were written in C and covered 450+ requirements.

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Technical Lead at DornerWorks (September 2008 - November 2009)
GE Aviation Common Computing System for Boeing 787

- Led a team of 12 people in developing DO-178B Level A high level requirement based tests for the Avionics Full-Duplex Switched Ethernet (AFDX) driver. This included writing 1500+ tests for 220+ requirements. The tests consisted of automated tests written in C, manual tests using a JTAG debugger, and code inspection tests, all run on the customer's target hardware.
- Involved in porting requirements based tests for over 200 requirements to a secondary hardware testing platform used for developmental testing.
- Led a team of 10 people doing DO-178B Level A problem report verification. This consisted of verifying that the problem report was completed according to process and working with the development team to correct any issues. It also involved C source code analysis, C source code review, and test execution.

Embedded Systems Engineer at DornerWorks (April 2006 – September 2008)
GE Aviation Common Computing System for Boeing 787

- Involved in the effort to develop the Board Support Package to allow the VxWorks Real Time Operating System to operate on a PowerPC 7447A/7448 Single Board Computer. All software development was performed in C and PowerPC assembly languages, and was done to the DO-178B Level A standard. This development also included a design document that detailed each function within the BSP and what it did, and a document that described functions within the BSP that were made available to other parts of the system.

Other

- Involved in the effort to develop an electronic fan speed controller, and wireless remote that was capable of programming the fan for different speeds. This included hardware schematic design using DxDesigner, C software design using PSoC designer, board layout, prototyping, and testing. The design included a PSoC microcontroller, and I2C and SPI busses to communicate with different components such as a real time clock and a flash memory chip.

Intern at Smiths Industries Aerospace (now GE Aviation) (March 2005 – March 2006)

- Used C, National Instruments TestStand, and LabWindows to write a multi-threaded C wrapper around a test suite that allowed testing of multiple modules simultaneously.
- Wrote test equipment software in TestStand. This included testing modules produced by Smiths Aerospace as well as built in self tests of the equipment that was being used to test the modules.
- Involved in testing and debugging the hardware of a PowerPC Single Board Computer. This included visual inspection for correct part orientation, continuity checks, and checking that power was correctly distributed to the board.
- Involved in the design, validation, and testing of a digital circuit that is used in testing the power supply on a single board computer. This included preliminary design reviews of the circuit, testing the standalone circuit, and testing the circuit when fully integrated into the single board computer.

Calvin College Engineering Department (April 2004 – December 2004)

- Continued development of an application, written in C++, that analyzed acoustic and vibration response to forces. Also developed a GUI for the application.