Matthew Beck

801 Maplewood Dr Ste 26
Jupiter, Florida 33458
Phone: (863) 414-0273
Email: matt.beck@excel-medical.com

Objective

To become an integral part of an ambitious team developing embedded hardware and software, application-specific integrated circuits, and/or low level communication protocols.

Summary

- Extensive experience in producing drivers for a variety of devices and protocols using assembly languages and hardware description language
- Strong knowledge and experience in circuit design and PCB layout using CadSoft EAGLE
- Experience in modeling vision based robot control using Simulink/MATLAB
- Experience in designing and simulating antennas using Ansoft HFSS
- Working knowledge of encryption/decryption algorithms
- Experienced mentor and team leader

Technical Skills

Languages:	C/C++/C#, Verilog, Assembler, Java, Ruby, Shell, HTML
Processors:	Xilinx Virtex-II Pro, Atmel ATmega328, Motorola/Freescale 68HC11, Microchip dsPIC33FJ256MC710A, Texas Instruments MSP430 & LM3S8962
Hardware Design:	CadSoft EAGLE, Xilinx ISE (FPGA), PSpice/LTspice/NI Multisim
Protocols:	TCP/IP, ZigBee, SMS, RS-232, I^2C, 1 Wire, PS/2, VGA
IDE's:	Windows Visual Studio, MPLAB, Eclipse, Code Composer Studio
Other:	MATLAB/Simulink, Ansoft HFSS, keystroke logging, Diffie–Hellman key exchange

Education

University of Central Florida — Orlando, FL

Bachelor of Science in Electrical Engineering — *Graduated December 2012*

- Overall GPA: 3.5
- 9 Hours of Graduate Credits

Work Experience

Excel Medical Electronics — Jupiter, FL

Hardware/Software Systems Engineer — *January 2013 - Present*

Excel Medical Electronics is a medical information technology company focused on aggregating data from patient monitors and other devices, sending it to EMR servers for patient records, and supercomputers for advanced research and clinical studies.

- Writing drivers to extract data from medical devices. (C#, Microsoft Visual Studio)
- Developing hardware adapters to help interface with and identify medical devices as they are plugged in (Microchip MPLAB, PIC12F)
- Assisting the lead software engineer with developing and debugging hospital server software. (C#, Microsoft Visual Studio)

Synthes Anspach — West Palm Beach, FL

Associate Product Development Engineer [Co-op] — *August 2011 - December 2011*

Anspach specializes in the design and manufacturing of surgical devices. Responsibilities included assisting with the development of high powered electric drills.

- Interfaced 1-Wire EEPROM to existing I^2C bus infrastructure (Microchip MPLAB, dsPIC33)
- Developed hardware and GUI for testing pushbuttons and seven-segment displays (C/C#/C++, Microsoft Visual Studio)
- Demoed GUI's with Johnny Chung Lee's open sourced WiiMote SMART Board

University of Central Florida — Orlando, FL

Supplemental Instruction Leader — *August 2010 - December 2012*

Supplemental Instruction consists of study sessions intended to improve student success within historically difficult courses. Sessions are conducted by a selected group of elite students.

- Lead four, one hour group tutoring sessions per week
- Conducted online group tutoring sessions (with Adobe Connect Pro)
- Served as UCF's first SI Leader for both C Programming and Computer Science I

Sr. Design Project *June 2012 - December 2012*

Web enabled Application allowing wireless monitoring and control of electric receptacles. Responsibilities included procurement, PCB layout, and communications design.

- Managed diverse team of individuals with unique skills to accomplish explicit goals
- Designed and built wireless router for local network
- Developed communication protocol on top of ZigBee protocol suite
- Hand soldered 4 ATmega328 controlled PCB's
- Designed and implemented digital low pass filter to smooth current sensor readings

Adaptive 2.5D Visual Servoing Project *October 2012 - December 2012*

Simulation of autonomously controlled camera position and orientation, intended to be fixed to the end effector of a kinematically redundant robot manipulator.

- Responsible for development of camera control model based on research from various universities
- Completed in MATLAB via Simulink

Field-Programmable Gate Array Design Project *September 2012 - November 2012*

Basic Input/Output System (BIOS) comprised of PS/2 keyboard & VGA Drivers.

- Responsible for designing and implementing hardware controlling the timing and communication protocols for PS/2 keyboard input and VGA screen output
- Developed in Xilinx ISE, coded in Verilog, and flashed on a Xilinx Virtex-II Pro

The Proprietary Key X-Change *September 2012 - October 2012*

Diffie–Hellman encryption/decryption demonstration program. Allows for completely secret communication.

- Responsible for designing, producing, and testing application
- Uses modular exponentiation, a recursive primality test, and double pointers