Mitchel Allen Humpherys

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Education

Utah State University *2004 - 2010*

Graduated cum laude with a B.S. in Computer Engineering and a minor in Computer Science.
GPA: 3.67.

Relevant Coursework

Real-Time Systems

Implemented a real-time operating system in C with priority preemptive scheduling on an ARM microcontroller.

Parallel Programming

Wrote programs in C++ targeting an MPI high-performance computing cluster as well as multi-core computers using the OpenMP library.

Microcomputer Interfacing

Built a self-solving maze platform based on an 8051 microcontroller and the OpenCV library.

Relevant Work Experience

L-3 Communications, Linkabit Division **San Diego, CA**

Embedded Software Engineer *2011-current*

Developed software in C++ and C for a Satcom IP Modem. Made improvements to the over-the-air message format to optimize bandwidth utilization. Helped with the port of a TCP accelerator based on the SCPS-TP protocol from a FreeBSD-based system to VxWorks. Developed scripts in Python and Bash to automate the process of downloading new code to the target platform. Worked on a Wireshark dissector used to debug the over-the-air messages. Implemented an Ethernet software bridge in userspace with libnetfilter_queue and iptables using C and Bash to simulate the latency of the satellite network.

Utah State University ECE Department **Logan, UT**

Undergraduate Researcher *2010*

Worked in a research lab in the ECE department to develop a wireless sensor network to monitor horse distress levels using an AVR-based ZigBee software/hardware stack, accelerometer, and tilt sensors. Built using a gcc cross-toolchain under Linux.

Utah State University Research Foundation **Logan, UT**

Web Applications Developer *2007 - 2008; 2009 - 2010*

Developed dynamic web applications using Tcl, JavaScript, and PostgreSQL in a Unix environment.

Center for Self-Organizing and Intelligent Systems **Logan, UT**

Undergraduate Researcher *2008 - 2009*

Helped develop a platform for an Unmanned Aerial Vehicle project. Developed airplane-tracking software in C++ and OCaML for the UAV autopilot software. Worked with an embedded Linux environment on Gumstix boards. Helped develop a vision-based navigation platform for the UAV using OpenCV and the Ivy Software Bus.

Skills

Programming Languages (in order of proficiency): C, C++, Python, Bash, JavaScript, Emacs Lisp, PHP, TCL, Assembler (x86 and ARM), Java.

Libraries, Tools, and Systems: GCC, GDB, GNU/Linux, Make, TCP/IP, Emacs, Vim, awk, sed, diff, patch, ssh, rsync, Git, Subversion, STL, Boost, scapy, matplotlib, Wireshark, tcpdump, iperf, CORBA, IDL, Sqlite3 (C and Python bindings), PostgreSQL, MySQL, HTML, CSS, Google App Engine, Django, Android SDK, VxWorks, libnetfilter_queue, iptables, LaTeX, I^2C, JTAG, RS-232, Eagle PCB Design, OpenCV, Ivy Software Bus, Eclipse, Netbeans, GTK, MatLab, Octave.

Miscellaneous: Fluent in the Portuguese language.

Activities

College of Engineering Ambassador **Utah State University**

2008 - 2010

Served as a representative for the College of Engineering. Gave tours to potential engineering students. Also went on recruiting trips.

USU IEEE Council Webmaster **IEEE**

2009 - 2010

Served on the USU IEEE Council as the webmaster. Was involved with planning activities and recruiting students for the IEEE and ECE. Also maintained the branch web site and a Sage Math compute server.

National Science Foundation Research Experience **Utah State University**

Summer 2008

Participated in a summer research program sponsored by the National Science Foundation. Worked on an autonomous UAV project.

Accomplishments

- Received the UCR Chancellor's Distinguished Fellowship.
- Wrote a grant proposal and received funding through Utah State University's URCO program to do research on Vision-Based Autonomous Navigation of UAVs.
- Completed a 2-year service mission in Campinas, Brazil.
- Finalist in the Fall 2007 USU Voices writing competition with a paper on using Linux as an alternative operating system to Windows on campus.
- Received the USU Presidential Scholarship.
- Eagle Scout.