Mitchel Allen Humpherys

California, USA / mitch.special@gmail.com / mgalgs.github.io / (435)565-1234

WORK EXPERIENCE

Qualcomm Inc.   San Diego, CA
Senior Software Engineer   *2012-current*

Developed drivers and made enhancements to the Linux kernel for Qualcomm MSM ARM SoCs. Worked on drivers for kernel memory allocation, IOMMU hardware and camera hardware. Wrote an extensible performance regression test framework for memory components that gained widespread adoption internally and by OEMs as a key performance indicator. Performed "bring-up" of memory components of new chips. Created development tools to boost productivity (shell scripts, web applications, Emacs extensions, browser extensions, etc.) that gained widespread use throughout the company. Made changes to the "repo" source control tool that reduced code sync times by 75%. Developed a build service that increased the pace of development by reducing engineering build times and alleviating individual workspace maintenance overhead. Curated documentation related to development and process that became the standard reference for hundreds of engineers and required reading for new hires on certain teams. Built a heavily-used web application to facilitate sharing internal engineering tools which helped reduce duplicated effort and spread the word about useful tools.

L-3 Communications, Linkabit Division   San Diego, CA
Senior Software Engineer   *2011-2012*

Developed software in C++ and C for a Satcom IP Modem. Made improvements to the over-the-air message format to optimize bandwidth utilization. Implemented new features and enhancements to the modem protocol code. Worked on porting a TCP accelerator module (based on the SCPS-TP protocol) from a modified FreeBSD system to VxWorks. Worked with Linux, FreeBSD, and VxWorks kernel modules and device drivers, as well as the internals of the FreeBSD network stack. 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. Produced design documentation for several new features and conducted design reviews. Trained other team members on the git version-control tool.

Utah State University ECE Department   Logan, UT
Research Assistant   *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.

Utah State University Research Foundation   Logan, UT
Web Applications Developer   *2007 - 2010*

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

Center for Self-Organizing and Intelligent Systems   Logan, UT
Research Assistant   *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 development boards. Helped develop a vision-based navigation platform for the UAV using OpenCV and the Ivy Software Bus.

OTHER PROJECTS

Android Development

Developed and maintain two Android applications (currently available on the Google Play store). *Track That Thing*: a real-time location tracker which stores data to a Django web application with an accompanying web interface. *WikiPaper*: a live wallpaper that pulls random articles from Wikipedia and displays their summary in an auto-scrolling interface on the home screen.

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.

Skills

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

Libraries, Tools, and Systems: Linux, Git, Docker, btrfs, RabbitMQ, ftrace, Make, TCP/IP, Emacs, JTAG, GCC, GDB, Vim, GNU Global, cscope, Subversion, Gerrit, awk, sed, Boost, scapy, matplotlib, Wireshark, tcpdump, iperf, Sqlite3 (C and Python bindings), PostgreSQL, MySQL, HTML, CSS, Google App Engine, Django, Android SDK, FreeBSD, VxWorks, libnetfilter_queue, iptables, LaTeX, I^2C, Eagle PCB Design, OpenCV.

Certifications: Linux Foundation Certified System Administrator.

Miscellaneous: Fluent in the Portuguese language.

Activities

Futsal Club Committee Chair   **Qualcomm Inc**
2012 - current

Coordinated and organized Futsal games on Qualcomm campus, providing much-needed recreation and physical activity for 15-20 other players. Became an official company-sponsored club. Organized tournaments with 50+ participants.

College of Engineering Ambassador   **Utah State University**
2008 - 2010

Served as a representative for the College of Engineering. Gave tours to potential engineering students and went on recruiting trips to high schools in the region.

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 voluntary service mission in Campinas, Brazil.
- Was a finalist in the Fall 2007 USU Voices writing competition.
- Received the USU Presidential Scholarship.
- Eagle Scout.