Alex Ray

Circuit bender, kernel hacker, robot builder, urban explorer, scientist

Objective

Hacking on embedded software to drive innovative systems. Problems involving logic analyzers. Designing, testing, and optimizing. Probably writing device drivers too.

Computer Skills & Languages

Programming:	C/C++, Python, JavaScript, Go, Bash, Make, ARM Assembly, Verilog, SQL, HTML, CSS
Embedded:	Linaro toolchain, CodeSourcery toolchain, J-Link, ST-Link, OpenOCD, Saleae Logic, BusPirate
Software:	Git, Subversion, Mercurial, Bzr; LaTeX; Linux, OS X; GCC/GNU, GDB, Vim, Autotools, Make
Platforms:	PandaBoard, BeagleBone, STM34F4-Discovery, ATmega328, LPC1768, SAM3S

Experience

2012-present **Software Engineer - Android Kernel/Systems**, *Google*, Mountain View, CA.
- Kernel/bootloader bringup on new systems (nexus devices)
- Camera/Sensor device drivers and hardware interface modules
- Computational Photography integration/controls and testing
- Buildsystem, debugging and performance-monitoring tools

Summer **IBM Extreme Blue - Software Intern**, *IBM*, Austin, TX.
- Built 9p/virtio drivers for the GRUB2 bootloader
- Added 9p/virtio support to the Dracut initramfs infrastructure
- Improved 9pfs in the Qemu processor emulator
- Implemented 9p/virtio features in Virtual Machine Manager

Summer **Cisco Choice - Software Intern**, *Cisco*, Morrisville, NC.
- Developed tools for debugging of multi-core enterprise-domain routers.
- Built device drivers to monitor performance events on chip for measurement/profiling

Summer **Google Summer of Code**, *Minix Project*, Amsterdam, Netherlands, remote.
- Build drivers and kernel support for on-processor performance monitor counters (PMCs)
- Develop tests to measure performance and profile applications

2 Semesters **Computational Software Developer**, *Optoelectronics & Lightwave Engineering Group*, NCSU.
- Developed modelling software to simulate and verify experimental findings
- Optimized runtime using multithreading, multiprocessing and GPU computing on multiple platforms

2 Years **Computational Lab Assistant**, *Computational Chemistry Research Group*, NCSU.
- Sysadmin Linux computational lab machines (hardware and software)
- Explored new open source chemistry software packages
- Assissted/supported researchers with utilities & scripts

Education

2007-2012 **BS Textile Engineering, NCSU**, *Raleigh, NC*, GPA: 3.76.

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