Alex Ray

Circuit bender, kernel hacker, robot builder, competitive programmer.

Experience

3 Years — **NCSU Aerial Robotics Team**, *Extracurricular Student Organization*, Raleigh, NC.
- Design, fabricate, test and deploy various circuits and microcontrollers for use on the aerial platform and ground hardware.
- Develop and maintain software to control cameras in flight and wirelessly transmit images to ground station.
- Built a geospatial SQL database to organize and store mission telemetry and target intelligence.
- Imagery operator for the 2010 (1st) and 2011 (2nd) place teams at the AUVSI Student Unmanned Aerial Systems competition.

Summer — **IBM Extreme Blue Internship**, *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 Internship**, *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

Computer Skills & Languages

Programming: C, Python, Bash/Tcsh, Go, SQL, x86 Assembly, VBA

Electronics: CADSoft Eagle, Verilog/Icarus, gEDA, KiCAD, FreeRouting, SPICE

Software: Git, Subversion, Mercurial; LaTeX; Linux; GDB, Vim, Autotools, Make

Education

2007-2012 (expected) — **Textile Engineering, NCSU**, *Raleigh, NC*, GPA: 3.76.

Relevant Extracurriculars

- Officer, Hacker & Presenter for the NCSU Linux User Group
- Presenter for Google User Group (Go Programming Topics)
- The Triangle Arduino Hackers - local microcontroller development group
- Contributor to open source projects - see http://github.com/ajray

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