

Alex Leone

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Graduating UW June 2011

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Objectives

Software Engineer: I seek a position building fast, scalable, next-generation web infrastructure and applications (client or server side).

Embedded Hardware and Software Engineer: I seek a position designing and building novel devices, optimally involving Linux.

Skills

Languages: C/C++ (cmake, doxygen, gtkmm), Java (javadoc, junit), Python (sphinx, doctest, unittest), Javascript, Matlab, Labview, L^AT_EX

Operating Systems: Linux (Ubuntu), Windows

Applications: Emacs, Mathematica, MatLab, Sage, LabView, KiCad, L^AT_EX, OpenOffice, MS Office, GIMP, Inkscape, etc

Miscellaneous: excellent troubleshooting and debugging skills, exceptional problem solving skills, strong communication skills, enjoys network/threaded programming, has compiled the linux kernel

Work Experience

- **Self-Organizing Systems Lab (PI: Eric Klavins)** Seattle WA
Undergraduate Researcher *Dec. 2007 - present*
 - Implemented a machine vision system in MATLAB for experiments on a programmable parts testbed.
 - Designed, built, and experimented with 3 iterations of a continuous cell culture device for directed evolution experiments. Included:
 - * 3-axis CNC milling and construction with 80-20.
 - * Circuit Design and 2/4 layer PCB layout with KiCad.
 - * Implementing PID control in C for an 8-bit Atmel microcontroller.
 - * Complex Labview programming that communicated with a microcontroller and ran week-long experiments.

Open Source Development

- **Inkscape: Open Source SVG Vector Graphics Editor** <http://inkscape.org/>
Contributor with commit access *2009-present*
 - (C++ and gtkmm GUI code): added margin options for resizing a document.
 - (C++): fixed crashes regarding recursive mask/clipping references and other bugs.
- **Sage: Open Source Mathematics Software** <http://www.sagemath.org/>
Contributor *2009-present*
 - (Python, Javascript): Implemented a large matrix viewer (ala Google maps) for the web interface (the "sage notebook").
 - (Python web server, Python doctest, Selenium testing): patches and patch reviews for the sage notebook.

- **Tlc5940 Library for Arduino** <http://code.google.com/p/tlc5940arduino/>
Creator *2008-present*
 - (C, C++ for 8-bit Atmel microcontrollers, doxygen): Created an open-source library for a texas-instruments PWM LED driver chip.

Projects

- **Bioengineers Without Borders** <http://wiki.bioeng.washington.edu/bwb/doku.php?id=home>
Research and Engineering *2009-present*
 - Circuit Design and 2/4 layer PCB layout with KiCad, including a PCB for multi-wavelength absorbance measurements, and a battery-powered 12-lead ECG system that transmits data via bluetooth.
 - (Java) Wrote a threaded Android application to display ECG data in real-time.
 - C++ for a LPC17xx Arm-Cortex M3 microcontroller to pull data from an SPI ADC and send it over bluetooth.
 - Labview and python interface for collecting absorbance data from a micro controller.
- (javascript) Digikey Sort By Price: Wrote a complex greasemonkey script that sorts/filters parts data on www.digikey.com. (appeared on [sparkfun/hackaday!](http://sparkfun.com))
- (Java) gwt-google-apis: added streetview bindings to the official GWT Google Maps API.
- (Python) midibeep-server/client: wrote a server/client program that synchronizes lan computers to play different parts of any midi file using the pc-speaker, controlled via web interface.
- (Python) Everything Pre-Processor: created a macro/templating language with python-like syntax.

Student Competitions

- **Yahoo Hack-U** <http://developer.yahoo.com/hacku/>
3-time Winner *2009, 2010*
 - UW 2009 - 1st place for making pacman on Google Maps.
<http://code.google.com/p/pacmap/>
 - New York, 2009 - 1st place for making a “Recipe-Finder” app for Yahoo Connected-TV.
 - UW 2010 - 1st place for making a asteroids clone “Regex-battle” with javascript + svg + html5. http://students.washington.edu/acleone/hacku_uw2010/
- **Mathematical Contest In Modeling** *2008, 2009, 2010*
Participant
 - Awarded Meritorious in 2009. <http://www.math.washington.edu/~morrow/mcm/mcm.html>
- **IGEM** <http://2009.igem.org/Team:Washington>
Participant *2009*
 - Summer-long synthetic biology competition. Learned and used DNA cloning in the lab to build the display plasmid for our project.
- 2008, 2009, 2010 UW ACM Programming Competition
- 2010 Google Code Jam

Education

- **University of Washington** Seattle, WA
B.S. Physics and Math *2007-present (graduating June 2011)*