walker**mills**

software engineer

contact

MSC 767
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languages

spanish (fluent)

programming

advanced:
C, C++, MySQL,
(C)Python, Cython
Haskell, Linux/Unix
Bash/Zsh
proficient:
Pyrex, Java
Lisp, IA32

technologies

Django, Apache
Android, Sage
Chromium

tools

GCC/G++, Make
SWIG, GDB, Git
Gerrit, ADB
SSH/Mosh

education

2012–2016 | **Bachelor of Computer Science** – California Institute of Technology

experience

Summer 2013 | **Amazon Lab126** | Sunnyvale, California

Software Development Engineer Intern
Improved video streaming performance for Amazon WebView, a fork of Chromium, and worked on related video streaming projects for Amazon's Kindle Fire HDX devices. (NDA)
Detailed achievements:

- Learned how to incorporate version control into my daily work flow.
- Taught my co-workers how Chromium's multimedia internals work.
  - Examined the Chromium source code to determine (and document) how the multimedia internals worked.
  - Traced method calls on production devices to constructed a hierarchical representation of control flow through WebView's multimedia internals under Chromium's multi-threaded, asynchronous architecture.

projects

January 2014 | **CryptoBot**

Cryptocurrency trading platform and algorithmic trading bot engine
CryptoBot provides users a unified trading desk and an easy interface to create algorithmic trading bots for supported cryptocurrencies.
Responsibilities:

- I lead design and development of backend systems, application framework, and general middleware
  - I concepted and implemented libraries to manage autonomous trading bots (written in C++) running on our servers from Python, based on user requests sent from Django via a Cython interface
  - I built the MySQL-backed Django user authentication system into our bot libraries, so that bots are capable of automatically making trades
- I am the sysadmin for our production servers and code repositories

BatStats

Battery widget using Linux kernel headers

- Written in C; uses Linux kernel headers to query power supply state
- If discharging, in addition to time until empty, displays the estimated total battery life, given current capacity
  - More intuitive heuristic upon which to judge battery performance
- If charging, in addition to time until charge is complete, displays the estimated time of completion, and the day of the week if that time crosses the date line

Hackathons

- Google 24 Hours of Good - LA (November 2012), LA Hacks (April 2013), Hacktech (January 2014)

courses

California Institute of Technology

Courses:

- *CS 24*: Computer systems, including hardware-software interface, computer architecture, and operating systems
- *CS 121*: Relational databases, with extensive hands-on work with SQL databases
- *Ma/CS 6a*: Graph theory, algorithms, and combinatorics, as well as topics from cryptography, including Hamming codes and RSA
- *CS 90*: Researching and developing algorithmic trading stategies for cryptocurrencies like Bitcoin, with the intention of creating functional autonomous algorithmic cryptocurrency trading bots, with Prof. Adam Wierman
- *CS 11*: Building a (live) production ready algorithmic cryptocurrency trading and botting platform
- *CS 101c*: Taught in Haskell, this course explores (pure) functional programming
- *CS 11*: Computer language workshop (C, C++)

communication skills

2008-2012	**Speech & Debate**	Team Captain

Successfully competed in public speaking and debate events at league and charity tournaments at the state and national level.

Summer 2013	**Lab126 "Brown Bag" Presentation**	Information and QA session

Presented details of my work and relevant systems to co-workers over the course of an informal lunch session, followed by a period of questions.

interests

professional: leadership training, backend/framework development, metaprogramming, automation, distributed systems, information security, C-level systems programming, functional programming **personal:** long-distance running, cooking, metallurgy, Aikido, fencing, archery, marksmanship, (three cushion) billiards, hiking, backpacking, whitewater rafting