

SKILLS

- **Languages:** Objective-C, Swift, JavaScript, Lua/LuaJIT, Python, C, C++
- **Tools / Software:** nginx, OpenResty, PostgreSQL, SQLite, Redis, OpenGL, FreeBSD, git, vim, bash, Xcode
- **iOS:** Core Audio, reverse engineering (IDA disassembler, cycript), runtime modification development, app development, toolchain/framework development, Objective-C runtime, Objective-C / Lua interop

WORK EXPERIENCE

- **Cydia Store** Remote
Vendor (Sole Proprietorship) *July 2014 - Present*
 - Programmed, designed, and marketed iOS runtime modifications as consumer-facing software products, totalling over 5 million installs. It involves reverse engineering closed-source components of iOS, and collaborating with other developers (remotely, across different timezones). More info in the "public products" section.
- **Quixey** Palo Alto, CA
Software Engineer (Intern) *Jan. - July 2012*
 - **Quixey Challenge:** Improved the recruiting pipeline by automating much of the process with a web application, using Meteor (Javascript / Node.js / MongoDB stack). Saved about 100 person-hours per month.

PUBLIC PRODUCTS

- **EQE** OpenResty, iOS, Cydia Substrate, LuaJIT, C, Objective-C, Core Audio
Audio platform *Released Dec. 2017, still under active development*
 - **Description:** System-wide parametric equalizer, playback history tracker, and social platform for jailbroken iOS. Available on Cydia.
 - **Impact:** 500 daily active users and about 2000 weekly active users. EQE is the only system-wide parametric equalizer for mobile devices (EQE is the only one for iOS, and none exist for Android).
 - **Review:** <http://www.idownloadblog.com/2017/12/16/eqe-review/>
 - **More info:** <https://eqe.fm/about>
- **Cylinder** iOS, Cydia Substrate, Lua, C, Objective-C, Core Animation
Animation platform *Released Feb. 2014*
 - **Description:** iOS framework (jailbreak required) that allows custom icon animations while swiping a page on the home screen. Animations come from user-made Lua scripts using a custom API I designed. Available on Cydia.
 - **Impact:** 4.5 million cumulative downloads (the latest update has 1.2 million downloads). The Lua API facilitated the creation of about 50 custom "effects" by users. Cylinder is basically a de-facto tweak when it comes to jailbreaking, for example it's frequently used to demo WIP jailbreaks.
 - **Source code:** <https://github.com/rweichler/cylinder>
 - **Review:** <http://www.idownloadblog.com/2014/03/30/cylinder-cydia/>
- **EqualizerEverywhere** iOS, Cydia Substrate, Lua, C, C++, Objective-C, Core Audio
System-wide graphic equalizer *Released July 2014*
 - **Description:** System-wide 10-band graphic equalizer for iOS (jailbreak required). Available on Cydia.
 - **Impact:** This was the only system-wide equalizer for iOS until I made EQE, which essentially cannibalized this. Had about 100,000 users.
 - **Review:** <http://www.idownloadblog.com/2014/07/25/equalizeeverywhere/>

PERSONAL PROJECTS

- **Lucy:** Lua / Objective-C bridge and runtime analysis/debugging tool for iOS. <https://github.com/rweichler/lucy>
- **jjjj:** GUI package manager for iOS (based on dpkg, similar to Cydia). <https://github.com/rweichler/jjjj>
- **Aite:** Build system (like GNU Make). <https://github.com/rweichler/aite>
- **Sunnyveil:** 3D game engine written in C and LuaJIT. Has Lua bindings to Bullet (physics engine) and OpenGL.
- **Wuigi:** Mario clone (kind of like Mario Maker), written in Java. <https://github.com/rweichler/wuigi>

EDUCATION

- **UC Davis** Davis, CA
Bachelors in Computer Science *Graduated in 2017*