Reed Weichler

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EDUCATION

- **UC Davis**
  Bachelors in Computer Science

  Davis, CA
  Jun. 2017

PRODUCTS

- **EQE**
  Audio platform

  OpenResty, iOS, Cydia Substrate, LuaJIT, C, Objective-C
  Released Dec. 2017, still under active development

  - **Description**: System-wide parametric equalizer and playback history tracker for jailbroken iOS. It ties into a web service where people can view the equalizer presets and playback history of other users, akin to Last.FM. Available on Cydia.
  - **Relevant tech**: Multithreaded programming, inter-process communication, SQLite (for saving playback history), maintaining a production server, providing user support, reverse engineering, iOS application development, maintaining/expanding a large (~25KLOC) codebase.
  - **Impact**: Based on unique IPs, 500 daily active users and about 2000 weekly active users. It's also worth mentioning that EQE is the only system-wide parametric equalizer for mobile devices (EQE is the only one for iOS, and none exist for Android).
  - **More info**: https://eqe.fm/about
  - **Source code**: https://github.com/rweichler/EQE

- **Cylinder**
  Animation platform

  iOS, Cydia Substrate, Lua, C, Objective-C, Core Animation
  Released Feb. 2014

  - **Description**: iOS runtime modification/framework (in SpringBoard) for custom icon animations while swiping through the homescreen. For example, you can make your app icons animate to take the form of a 3D cube or a snake. Animations come from user-made Lua scripts using a custom API I designed (basically a `CATransform3D` abstraction layer). Available on Cydia.
  - **Impact**: 4.5 million cumulative downloads (the latest update with 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
  - **Subreddit**: https://reddit.com/r/cylinder

- **EqualizerEverywhere**
  System-wide graphic equalizer

  iOS, Cydia Substrate, Lua, C, C++, Objective-C
  Released Jul. 2014

  - **Description**: iOS runtime modification that adds a 10-band equalizer to the Control Center. It applies to the system audio output (in the mediaserverd process). Available on Cydia.
  - **Impact**: This was the only system-wide equalizer for iOS until I made EQE, which essentially cannibalized this. Had around 100,000 users in total (it's hard to pinpoint due to not having any analytics other than a download count of paying users, this is extrapolating from the 9,000 paying users using Cydia's 92% piracy rate).

WORK EXPERIENCE

- **Quixey**
  Software Engineer (Intern)

  Palo Alto, CA
  Jan – July 2012

  - **Quixey Challenge**: Worked on a team developing a web-based recruiting platform, using the Meteor framework.

PERSONAL PROJECTS

- **Lucy**: Open source Lua / Objective-C bridge and runtime analysis/debugging tool for iOS. https://github.com/rweichler/lucy
- **jjjj**: Open source GUI package manager for iOS (with a dpkg backend, similar to Cydia). https://github.com/rweichler/jjjj
- **Aite**: Open source build system (like GNU Make). https://github.com/rweichler/aite
- **Sunnyveil**: A from-scratch 3D game engine with an emphasis on Lua scripting. It has bindings to the Bullet physics engine and OpenGL.
- **Wuigi**: Open source Mario clone written in Java. https://github.com/rweichler/wuigi