Ryan Conway

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WORK EXPERIENCE

Knurld – *Software Engineer 8* – Redwood City, CA June 2016 – August 2016

- Designed and developed the Knurld web API's iOS SDK in Swift. Open-sourced on GitHub.
- Contributed to the Knurld API Swagger specification.

Arrayent – *Senior Software Engineer* – Redwood City, CA June 2012 – June 2016

- Designed and developed an operating system and networking stack abstraction layer in C, decreasing cost of supporting new embedded platforms.
- Migrated an enterprise Java application from Java 6 to 8.
- Wrote a high-level EC2 Spot Instance manager in Python, cutting costs of server tests.
- Refactored an embedded application-transport layer, improving code clarity, modularity and size.
- Instrumented cloud Java applications with health monitoring and metrics reporting.
- Automated customer support and QA tasks by developing Python and Bash scripts.
- Interviewed technical candidates and mentored engineering interns.

UCSC School of Engineering – *Mechatronics Tutor* – Santa Cruz, CA January 2012 – March 2012

- Assisted students in UCSC's "Introduction to Mechatronics" course, working with embedded C, CAD software, and electronic sensor circuitry.

SELECTED PROJECTS

Ostrich – *personal project* March 2016 – present

A Nintendo Game Boy CPU (LR35902 / Zilog Z80) and audio unit emulator, with macOS UI.

- Fully implements Game Boy pulse audio channels and ~85% of the opcodes of the CPU
- Accompanying UI written with AppKit / Cocoa enables chip music playback
- Leverages Swift's support for protocols and generic programming to enable quick opcode development
- Written in Swift, open-sourced on GitHub

Twitch Plays Paper Mario – *personal project* June 2015 – Oct 2015

A chat bot and virtual game controller that enable the collaborative play of single-player video games online.

- Controller supports intuitive commands like "left" and "b" but also advanced command chaining and durations for nearly frame-perfect analog inputs, such as "25% left 50ms b up+z a 75% right (2s) b"
- Automatic game state backups and moderation system mitigated trolling
- Attracted over 3,500 views, 400 followers and a tight-knit community on twitch.tv
- Written in Rust, open-sourced on GitHub

Alien Mechatronic – *personal project* October 2016

An embedded project that mounts and controls a DC motor and high-power LED to create a simple Halloween animatronic. Based on Arduino.

Human Energy Monitoring – *UCSC / Plantronics, 5-person team project* Winter & Spring 2012

A wearable embedded device that uses MEMS sensors to capture human body movements, with accompanying web-based visualization tools. Developed in partnership with Plantronics as a means of researching the feasibility of charging wireless devices with human energy.

Autonomous Bullfighting Robot – *UCSC mechatronics course, 3-person team project* Winter 2011

An autonomous ping pong ball-shooting robot that competed against others in a public tournament. Built with a Motorola HC12, an array of sensor circuits, CAD software, and a laser cutter.

SKILLS AND KNOWLEDGE

Languages: *primary:* Java, C, Swift; *experience with:* Python, Rust
Tools: Xcode, git, IDEA, Maven, Bash, svn

EDUCATION

University of California, Santa Cruz – BS Computer Engineering, minor EE, June 2012. Tau Beta Pi.