

# GREGORY SHUFLIN

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## Qualifications and interests

Motivated, professional computer scientist with broad expertise across several disciplines of industry and open-source software development:

- Programming language, parsing, and typechecking theory, strongly-typed functional programming languages, Scala, Haskell, Elm, Rust.
- Network programming and troubleshooting (OSI model layer 2-4, TCP/IP, IPv6, Ethernet), hardware and software packet processing, embedded Linux hardware bringup, writing clear and maintainable C and C++. Can solder if necessary.
- Full-stack web development, PostgreSQL, Ruby on Rails, Django (Python), modern Javascript (frontend and Node.js) and Javascript tooling (grunt/webpack/npm). I'm a fan of React.js.
- Linux system administration in production cloud environments, Docker containerization, AWS/Terraform experience. I have a running 4U VM server on a shelf in my apartment.

## Professional Experience

### Toolchain Labs

San Francisco, CA

*Software Engineer*

*2019 - 2021*

- Primarily responsible for contributing business-critical features, bugfixes, and documentation to the Pants open-source build system.
- Updated old Python codebase to modern typed Python + Rust execution core for improved performance and maintainability. Frequent Rust/Python FFI and Python metaprogramming.
- Routinely collaborated with external contributors in a spirit of good open-source citizenship.
- Contributed to internal React/Typescript frontend work, Django/AWS backend work at early-stage startup (<10 employees) when all hands needed on deck.

### 3D Robotics

Berkeley, CA

*Senior Software Engineer*

*2017 - 2019*

- One of two members of the backend/devops team. Primarily responsible for feature development for API microservices in Scala (Akka/Couchbase NoSQL), and AWS provision of the same (Docker, Terraform).
- Built systems for processing GDAL geospatial data, efficiently running TensorFlow/OpenCV ML workflows on quadrotor drone photos.
- One time I grabbed a Windows laptop and set up a Visual C++ environment so I could apply a 10-line bugfix patch to some Autodesk software we depended on. Only time so far I've needed to do that.

### Cisco Meraki

San Francisco, CA

*Software Engineer*

*2013 - 2017*

- Primarily responsible for feature development and support of several different models of cloud-managed Ethernet switches and WiFi access points.
- Healthy mix of embedded Linux firmware development on networking hardware (C++) and full stack web development (Ruby on Rails/PostgreSQL + a little Scala).

- Designed and built WiFi statistics monitoring widget with d3 and React, looks cool in demos and saved at least one deal.
- Regular troubleshooting and debugging of hardware and software in production network environments. The 802.1Q protocol identifier value 0x8100 is burned into my memory from seeing it in packet logs so often.

## Education

### University of California, Berkeley

*August 2007 - December 2012*

*Bachelor of Arts, Computer Science, Linguistics, Japanese Language*

Relevant Coursework: Artificial Intelligence, Compilers, Operating Systems, Algorithms, Data Structures, Computer Graphics

## Personal Open-source Projects

**Untrusted** ([github.com/AlexNisnevich/untrusted](https://github.com/AlexNisnevich/untrusted)) An open-source browser-based roguelike game where the player must edit the game's code to progress. One of two primary developers. Early version won 1st place in Spring 2013 Berkeley CSUA Hackathon.

**Hilite (Rust Port)** Rust port (with a few new features) of Hilite, a simple command-line utility to highlight stderr output, useful for build systems.