doy@tozt.net
(618) 616-6287

Jesse Luehrs

https://tozt.net/

142 E 16th St. #19D
New York, NY, 10003

Work Experience

- **Stripe (**https://stripe.com/**)** Remote
  Staff Engineer *January 2015–June 2021*
  - Moved our CI infrastructure from a proprietary system to Jenkins. This included rewriting the testing infrastructure of our main monolith to run tests in parallel with process isolation to allow for better reproducibility and the ability to scale out automatically to many worker machines. This was able to reduce turnaround time for tests by over 80%, and provided a path to scaling out to more machines to keep test times down.
  - Converted all of our internal infrastructure to use an installation of Confidant (https://lyft.github.io/confidant/) for secrets storage and distribution, giving us much more control over which people and machines had access to our secrets.
  - Implemented an authentication service which allowed users to sign arbitrary data as their own identity in a way that machines could independently verify. This allowed us to remove almost all use of GPG at Stripe, which eliminated a large class of tooling issues related to deployments.
  - Contributed to importing all of our low level infrastructure which had originally been set up via custom tooling (or by hand) into Terraform, allowing us to (mostly) automate creation of new AWS accounts.
  - Contributed to our rollout of Envoy for service-to-service communication, giving us automatic, transparent mutual TLS for almost all internal traffic. Additionally, used features provided by Envoy to implement a blue/green deploy mechanism which greatly improved speed and reliability of deploys for our critical services.
  - Implemented a fleetwide service in go for running maintenance commands on servers (running puppet, restarting services, etc), which reduced the time needed for running these types of commands from several days in some cases to under 5 minutes. Additionally, designed a secure protocol for these types of actions which ensured that the end services would not perform any actions without first ensuring that the request was logged in a separate secure append-only logging system.
- **Infinity Interactive (**https://iinteractive.com/**)** Remote
  Senior Programmer *February 2010–August 2014*
  - Maintained a large, legacy codebase which handled employee engagement survey registration and reporting for several large companies.
  - Wrote and deployed many small websites for clients, using Perl and Javascript.
  - Developed and maintained various open source projects used in our client work, including Moose and Plack (see below).
- **UIUC Hydrogeology Lab (**https://www.gwb.com/**)** Urbana, IL
  Visiting Research Programmer *February 2006–February 2010*
  - Worked on the Geochemists' Workbench, a geochemistry software suite written in C++ and Tcl/Tk.
  - Added support for several new image output formats including SVG and PDF, and added features to existing ones, including adding font embedding support to our PostScript output.
  - Contributed to adding parallel processing support to several scientific calculations, using OpenMP.
  - Ported our calculation applications from Windows to Linux, to allow them to be run on large supercomputing clusters.
  - Implemented a testing framework for our calculation applications, using Perl's Test::More.

Open Source

A more complete list of my projects can be found on my website (https://tozt.net/projects.html and https://git.tozt.net/). All of my personal open source work is also available on GitHub (https://github.com/doy), and you can also find my Rust open source work on crates.io (https://crates.io/users/doy) and my Perl open source work on MetaCPAN (https://metacpan.org/author/DOY).

- **nbsh (**https://github.com/doy/nbsh**)** 2021–present

  I am currently developing an advanced new shell using Rust and Tokio which integrates aspects of terminal multiplexers to provide a user experience more similar to notebooks (such as Jupyter) than traditional shells.

- **rbw (**`https://github.com/doy/rbw`**)** 2020–present

  I wrote and maintain rbw, an unofficial command-line client for the Bitwarden password manager. rbw is written in Rust, and uses a background agent (in a similar style to ssh-agent or gpg-agent) to keep credentials persistently in memory.

- **Reply (**`https://github.com/doy/reply`**)** 2013–2016

  I wrote Reply, a lightweight and extensible REPL for Perl. It includes many useful features such as tab completion and history support.

- **Dungeon Crawl Stone Soup (**`https://crawl.develz.org/`**)** 2009–2016

  I was a member of the development team for Dungeon Crawl Stone Soup, a roguelike game written in C++ and Lua. I contributed several features to the game and was also the release manager for the 0.6 release.

- **Plack (**`https://plackperl.org/`**)** 2012–2013

  I was a member of the core development team for PSGI and Plack, the specification for Perl web server/application interaction (similar to Python's WSGI and Ruby's Rack).

- **Perl (**`https://www.perl.org/`**)** 2011–2013

  I was the release manager for the 5.17.1 development release of Perl, and I have also contributed many bug fixes. I was also a lead developer on the p5-mop project, a prototype of a new object system for Perl.

- **Moose (**`https://metacpan.org/dist/Moose`**)** 2009–2013

  I was a member of the development team for Moose, which provides advanced object orientation capabilities to Perl. I was also the release manager from 2011–2012.

- **TAEB (**`https://taeb.github.io/`**)** 2008–2011

  I was one of the lead framework developers for TAEB, a Perl framework for programmatic interaction with the game NetHack. I was also the primary developer for the leading bot written with TAEB framework.

Education

- **Recurse Center (**`https://recurse.com/`**)** New York, NY
  Student *September 2014–November 2014*
- **University of Illinois at Urbana-Champaign, College of Engineering** Urbana, IL
  Bachelor of Science in Computer Science with Minor in Mathematics *August 2004–May 2008*
  - Overall GPA: 3.61, Technical GPA: 3.81
  - Dean's List (Fall 2004–Fall 2006)
  - James Scholar in Engineering (2004–2005)
  - Graduated with Honors

Talks

Slides and videos (where available) for these talks can be found at `http://tozt.net/talks.html`.

- **Introduction to Rust (50 min)** YAPC::NA 2014

  This talk describes the Rust programming language, touching on its major features and design philosophies that make it interesting.

- **Dependency Injection with Bread::Board (50 min)** YAPC::NA 2012, YAPC::EU 2012

  This talk provides an overview of dependency injection, and gives concrete examples of it using the Bread::Board module for Perl.

- **OX - the hardest working two letters in Perl (50 min)** YAPC::NA 2011

  This talk describes the OX web framework for Perl, including a conceptual overview and usage examples.

- **Extending Moose (50 min)** YAPC::NA 2010

  This talk goes into detail describing Moose's meta object protocol, including what it is, how it works, and how you can extend it.

Skills

Languages: I am fluent in Rust, Ruby, Go, C, Perl, Lua, and shell.

Tools: git, vim, make, Jenkins, Terraform, Puppet, Docker