Resume - Robert Helmer

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Professional Experience

Senior Staff Software Engineer - Mozilla Corporation https://mozilla.com

Duration: 01/2020 to present, Full-time

Technical Lead for Mozilla Monitor personal data scanning and removal product.

- Implemented and launched subscription features
- Lead migration from custom static site to NextJS with server-side rendering
- Integrated with Mozilla experimenation system for split tests and roll-outs
- Moved to continuous deployment and enabled all engineers to deploy

Tecnical Lead for Mozilla Rally data donation project.

- Created and maintained WebExtension-based research studies for both Chrome and Firefox
- Onboarded new engineers
- Created user-facing web application using Firebase and GCP
- Worked directly with partners (Stanford, Princeton, and The Markup)

The Markup's reporting shows some of the impact of this work.

Staff Software Engineer - Mozilla Corporation https://mozilla.com

Duration: 06/2015 to 01/2020, Full-time

Lead client engineer for Experiments program.

Integrated the privacy-preserving Telemetry system Prio with Firefox.

- Prio allows for the collection and aggregate reporting of sensitive, possibly personally identifiable data, without the receiving party being able to identify the data of any particular user.
- Started, contributed to, and conducted reviews for, the libprio standalone project as well as implementing the Firefox integration.
- Launched successful pilot program to verify correctness and performance.
- Worked closely with Mozilla Telemetry teams on further integration and long-term support.

Joined Firefox TAG (Technical Architecture Group), advised on the future of Firefox front-end.

Direct contributions to Firefox:

- Resolved hundreds of issues.
- Lead the Go Faster initiative, which allowed for shipping Firefox features to users much

more quickly, in a continuous-delivery fashion. This was successful and lead to our more formalized Experiments program, for which I owned client engineering.

- Improved in-product pages such as `about:addons` and `about:crashes`.
- Helped launch auto-generated [Firefox documentation](#), most specifically contributing to [Sphinx-JS](#) for APIs (the Firefox front-end is entirely written in JS and is an exceptionally large project).

Directly responsible for the Add-ons/Extensions Manager in Firefox

- Fixed bugs and added features to built-in Firefox add-ons manager, did regular triage of the open bugs, and conducted code reviews for both staff and volunteers.
- Wrote and reviewed significant performance improvements for the Firefox Quantum release.
- Wrote and reviewed dozens of urgent "hotfix" extensions, to resolve serious problems found with Firefox clients in the field.
- Moved built-in Firefox features (Hello, Pocket) to extensions.
- Contributed to and advised on the WebExtensions implementation.
- Prototyped [backend add-ons manager component in Rust](#), and [front-end add-ons UI in React](#).

Senior Web Developer - Mozilla Corporation https://mozilla.com

Duration: 09/2010 to 06/2015, Full-time

Returned to Mozilla to work on big data problems around crash collection/reporting and performance test results.

- Technical lead on high-volume crash collecting and reporting system (Socorro, aka [crash-stats.mozilla.com](#)).
- Migrated Socorro to AWS from on-prem servers, with no downtime.
- Led rewrite and migration of Socorro front-end from PHP to Mozilla's standard Django-based framework [Playdoh](#) (later moved away from Playdoh to more vanilla Django).
- Created [Eddy](#) project for on-demand testing of FirefoxOS third-party apps, using Python, Flask, Celery and RabbitMQ.
- Developed features and fixed bugs on Mozilla [Etherpad](#) install.
- Contributed directly to upstream Etherpad project, on JS rewrite (formerly known as Etherpad Lite).
- Worked with open-source community to integrate contributions, support external installs, and make the testing, documentation and installation process better.
- Re-implemented web front-end for performance graph system ([demo video](#)).
- Built working [Go](#) and [Rust](#) prototypes of key crash collection and processing components (with tests).

Previous Mozilla employment was to automate the existing build and release infrastructure which was based on random one-off machines jettisoned from AOL/Netscape, with a completely manual release process. It took about **two weeks** to complete a Firefox release after code completion. By the time I left, we had completely standardized and version controlled virtualized environments and toolchains, and the turnaround time for a release was **12 hours**.

VP of Technology - CustomWeather http://customweather.com

Duration: 06/2008 to 09/2010, Full-time, 24x7 oncall

- Managed projects and worked directly with customers to deploy custom solutions.
- Moved co-located infrastructure to hybrid cloud/colo/remote.
- Built AWS-powered distributed map tile service for weather mapping project (also worked on frontend, which supported Bing and Google Maps/Earth).
- Added features and fixed bugs in Java/J2EE Tomcat real-time weather service.
- Developed reporting system using jQuery, flot, and PostgreSQL.
- Deploy fully redundant remote datacenter.
- Drove releases, automated release process.
- Developed unit and functional tests in Python and Java.
- Tracked and improved site performance and uptime.

Previously

- Consulting and full-time work (systems administration, programming, devops) for companies such as Dollartee, CustomWeather, Skeva Systems (Healthcare), Kaiser, Vectiv (Commercial Real Estate), Mozilla, and ValueStar.
- Bench test, tech/customer support for companies such as Talking Technologies Inc. and Sony.
- Fundraising and sales (cold and warm calling).

Major contributions to Open Source Software

- [Firefox](#) - web browser. Mostly JS (ES6+), a moderate amount of C++, tiny bit of Rust
- [Etherpad](#) - [Software Freedom Conservancy](#) committee member and contributor on Etherpad
- [Mozilla Socorro](#) - Crash collection+processing system for Firefox, Firefox OS, Thunderbird. Mostly Python and Django, small bit of C++

Programming Languages

Python, JavaScript/EcmaScript (JS/ES, both frontend web and also backend with Node), Java (J2ME/J2EE), Shell (bourne/bash/c), C, C++, Perl, PHP, Go, Rust

Other technologies

PostgreSQL, MySQL, XML, HTML, RabbitMQ, Elastic Search, Django, Flask, git, mercurial/hg

Domain Expertise

Weather systems and forecasting, physical geography
Geo-spatial / Geographic Information Systems (GIS)
Real Estate automation