Travis B. Hartwell

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Key Accomplishments (Across Organizations)

- **2022-2024**: Implemented dependency lock file update task runner and the associated infrastructure used to automatically update tens of thousands of Amazon internal projects on a regular basis.
- **2020-2022**: Implemented software and process improvements to scale the Amazon-wide automated build fleet 4x to handle hundreds of millions of build tasks weekly.
- **2018-2020**: Eliminated 10% of security issues Kindle organization-wide through the design and implementation of a system to identify and clean up unused infrastructure resources.
- **2015-2016**: Implemented fully automated formal test plans, including creating and deploying new clusters, executing benchmarks, gathering data, and generating reports.

Technical Skills

- **Programming Languages**: Bash, C, C++, Common Lisp, Emacs Lisp, Erlang, Go, Haskell, Java, Javascript, Lua, Python, Ruby, Rust, SQL
- **Infrastructure and Automation**: CI/CD, Docker, AWS Services (S3, SQS, Cloud Watch, Cloud Watch Log Insights Queries), Linux packaging: Debian, Red Hat, and NixOS
- **Security and Dependency Management**: package and dependency analysis, build systems

Professional Experience

Amazon / Amazon Web Services   **Seattle, WA**   **May 2017 - March 2024**

Throughout my tenure at Amazon and Amazon Web Services (AWS), I focused on designing, implementing, and operating tools and services that had organization- and company-wide impact, with my last four years focused on developer productivity and services.

Senior Systems Development Engineer, Code Foundations   **November 2022 - March 2024**

- Joined the Code Foundations team to lead **Amazon-wide software dependency upgrades** for Java and other language ecosystems, reducing security vulnerabilities and improving performance.
- Designed and implemented **dependency update task runner** in Go and associated custom worker fleet, automating updates for tens of thousands of internal software packages.
- Reduced a **company-wide JDK 8 upgrade campaign timeline** from 12 months to 4 months by developing a custom dependency and build request analysis tool.

Senior Systems Development Engineer, Builder Tools   **October 2022 - November 2022**

- Promoted to Senior Systems Development Engineer.

Systems Development Engineer, Builder Tools   **August 2020 - October 2022**

- Transitioned to the Builder Tools organization in AWS, focusing **scaling and automation** of the Amazon-wide build systems and fleets, used by **80,000+ technical staff** on **575,000 software packages**, executing **hundreds of millions of build tasks weekly**.
- **Led infrastructure scaling efforts**, growing automated build fleets from **1,500 workers to 5,000+ workers**, allowing for increased build traffic.
- **Reduced OS migration time by 75%**, executing a **2,500 server upgrade** in 3 months versus previous 12 month timelines.
- **Incident Management Leader** during major security eventss, including the **Log4Shell response**, overseeing the rebuild of **575,000 software packages Amazon-wide**.
- Mentored junior developers, resulting in **five promotions**.

Systems Development Engineer, Kindle Reader   **November 2018 - August 2020**

- Transitioned to the Systems Development Engineer role, focusing on operational-focused software development efforts **organization-wide**.
- Eliminated **10% of security issues** across the organization, by designing and implementing a system in Python used to identify and clean up unused infrastructure resources (server hosts, software packages, CI/CD pipelines) owned by 40+ managers.
- Wrote **custom dependency analysis tool** in Ruby that enabled targeted update of dependency versions across a related set of packages. Used in the upgrade of several large systems in response to security campaigns.

Support Engineer, Kindle Reader   **April 2018 - November 2018**

- Joined the Kindle Reader organization to **single-handedly** manage and support the Kindle feature WordWise; front-end implementation on EInk and Android app, management and update of backend systems used to process Kindle content, incident management, and escalated customer support.

Support Engineer, Digital Commerce   **May 2017 - April 2018**

- Joined Amazon with the Digital Commerce organization, providing support to **a dozen other Amazon teams** for internal accounting systems used for royalty and other payments.
- Trained accounting system development teams how to troubleshoot, investigate and better utilize **their own software systems** used to calculate and pay royalties on content sales. Trained and supported the major digital business units (e.g. Kindle, Prime Video, Amazon App Store) on using that system.

Basho Technologies   **Remote**   **September 2015 - April 2017**
Professional Services Software Engineering Consultant

Basho is the creator of the Riak distributed database; while on the professional services team I worked for Basho customers developing and testing solutions using Riak and the Riak Time Series database, particularly on deploying to Apache Mesos, focusing on performance and scale.

- Wrote and executed fully **automated formal test plans** and report generation for clients covering performance testing, operational testing, and scaling testing.
- Implemented features and fixes for **Riak Explorer, the Riak Mesos Tools, and the Riak Mesos Framework** in Go and Erlang.
- Managed **provisioning, configuring, and administering clusters** running Mesos used by development teams for test and development using Ansible.

Open Source and Community Contributions

All personal open source code and contributions can be found on my GitHub profile.

- Creator of MyCmd, a framework and tool for writing tools in Bash shell scripts, and MyProject, a project task runner written with MyCmd. A development log for these is here.
- Creator and contributor to Nix Emacs, completion support for Nix OS configuration options in Emacs.
- Contributions of code, packages, and documentation to NixOS and Spacemacs.
- Contributed support, bug fixes, and documentation for the Twisted Project.

Publications and Presentations

Full list and details of publications and presentations found here.

- Presented at Open West 2016, "Spacemacs: The Best of Both the Emacs and Vim Worlds."
- Presented at PyCon DC 2004, "PyGtk and PyGnome Programming."
- Presented at PyCon DC 2003, "A Twisted Web Tutorial."
- Gave various presentations, primarily around Python, Emacs, and regular expressions, at local user groups from 2000-2011.
- Published code in colleague Marc Anderson's Master's thesis, "Adapting Minimum Temperature Forecasts to Fruit Orchards in the Intermountain West."

Education

B.S. in Computer Science   **Fall 2003**
Utah State University   Logan, Utah