J. STEPHEN RILEY

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Leader, Builder, Innovator

TECHNICAL ADDENDUM

While working in management positions, I always strive to stay technical to better support my teams. I love to roll up my sleeves and do code reviews, help with tough QA repros, lead architecture and design discussions, and conduct classes to develop my people. This document dives into my technical contributions in my various roles.

(Ask me about items tagged with 💡 … there's a good story there.)

TECHNICAL NARRATIVE

Sr. Director, Engineering – Shared Services

Apptio, Inc. ◆ Bellevue, WA   2017 to 2019

Technologies: Java, C# (.NET Core), MySQL, PostgreSQL, Angular 1.8, React.js

Key Technical Contributions:

- Pushed the TypeScript agenda by writing a code generator (perl) to produce the `.d.ts` files for our Carbon-based UI library
- Prototyped the localization of our SSO service to demonstrate how L10N works to my teams. This was an Angular 1.8 site backed by a DropWizard Java service.
- Taught classes on Unicode and its various encodings as part of the L10N effort.
- Coached the legacy product team using POSA to guide their refactorings.
- Built many CLI and automation tools (.NET Core) to make dev work more efficient. When in doubt, automate!

Co-founder + CTO, Board member

Stabilitas.io ◆ Seattle, WA   2014 to 2017

Technologies: Perl, .NET Core, Elixir, PostgreSQL, RabbitMQ, Twilio, ElasticSearch

Key Achievements:

- Built a global emergency notification service for phone, SMS, mobile push, and email. Mix of Elixir, Perl, and C# services running against RabbitMQ queuing system.
- Built a horizontally scalable GIS tracking system for people and materiel. Monolithic REST API service (Mojolicious framework) scaled out as necessary; extensions and async features were services connected via RabbitMQ queues.
- 💡 Won SBIR grants for work on free text classification system and a free text to GIS data service. These were implemented in a mix of Python, C#, Elixir, ElasticSearch, and Google ML API.

Head of Next-Gen Technologies

Avalara ◆ Seattle, WA   2012 to 2014

Technologies: .NET 4.5, AWS, Cassandra, LocalDB, ANTLR4, SOA, DSLs

Key Achievements:

- 💡 Worked with tax lawyers, accountants and auditors for 14 months to "solve taxes". Our team came up with a "grand unified theory" of sales taxation that covered all US, EU, and BRIC taxation models.

- With a purely data-driven design, TNG was only 7.5% the size of the legacy system, while supporting any industry or geography.
- Applied compiler techniques (AST simplification) to reduce the know tax formulae from 690+ to 10.
- Implemented a single-click stack deployment system for AWS.

Vice President of Engineering
PlayNetwork, Inc. ◆ Redmond, WA   2009 to 2012

Technologies: C++, Python, ffmpeg, OpenGL, SQLite, ASP.NET, SQLServer, Windows Server, Linux

Key Achievements:
- Started the migration of decade-old, buggy, multi-threaded C++ code by splitting out functional subsystems into Python services running concurrently on the media appliances.
- Planned architecture roadmap to migrate away from a dead-end 4D database platform to a global, distributed, L10N-ready web application.
- Developed video compositing effects for low-end video hardware with OpenGL, ARBfp1.0, and VDPAU.

Other selected technical contributions
Various   1997 to 2009

Technologies: C++, Python, Elisp, C#, VB, ANTLR3, IIS, …

Key Achievements:
- Used Emacs (Elisp) to process SEC filings formatted as HTML on a 90-day timeline
- Built the first web API for Wall Street
- Accidentally built an EC2 clone with VMWare ESX
- Built a "drive-by exploit" recorder and replay system that could detect, watch, playback, and isolate the source of complex browser attacks—all automatically
- Built a video appliance that cost 1/3 of competitors' systems, and whose backend systems reduced video preprocessing requirements to O(1) (from O(n)) relative to customer base.