Brian Ollenberger

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Mission

To uncover the simplicity in our shared complex systems, driving practical benefits for customers and empowering colleagues to contribute effectively.

Summary

- Experienced software engineer and technical leader with a proven track record of building scalable systems, mentoring teams, and driving cross-functional initiatives.
- Initiative to apply elegant, quality solutions to practical problems.
- Ability to span low-level technical details and higher-level strategy.
- Focus on distributed systems, open standards, and protocols.

Skills

- Team mentorship, design and code review. Focus on reducing complexity and improving maintainability.
- Cross-team engineering project planning and execution. Negotiating conflicting requirements, and solving for the customer need.
- Strong proficiency in many programming languages and paradigms, including Java, Go, Python, Hack, Erlang, Ruby, C, C++, and JS, among many others.
- Deep knowledge and understanding of Internet standards and protocols, including LDAP, OAuth, OpenID, HTTP, HTML, CSS, ASN.1, Protobuf, Thrift, Sun RPC, NFS, DNS, and TLS.
- Web and Internet API integration, for example: Google Checkout, Paypal, Payflow, Stripe, Zendesk, TripIt, Instagram, Facebook, and Sabre.
- Relational database development and administration, including PostgreSQL, MySQL, Redis, Mongo, along with multiple proprietary systems.
- Network and cryptography programming, including TCP/IP, TLS, routing protocols, and peer-to-peer clustering protocols.
- UNIX systems programming and administration, with particular strength in Linux, FreeBSD, and Solaris, including Solaris kernel module development.

Experience

April 2022 to Present: Google
Software Engineering Lead – Cloud TPU

- Lead a team of 9 engineers to provision TPU AI accelerators for external and internal Cloud customers.
- Mentored new team members, owned project priorities, and reviewed design and code for best practices and maintainability.

- Partnered with compute, runtime, and product teams and internal customers to satisfy functional requirements for external product launches.
- Created a novel transpilation framework in Golang for long running asynchronous provisioning operations. With half the lines of code and less error-prone manual release management, this significantly accelerated feature development and eliminated backward compatibility errors.

October 2019 to April 2022: Facebook
Software Engineer – ML Hub

- Refactored the shared AI model metadata store, unifying disparate ML training and serving frameworks. Performed and orchestrated complex multi-team data and schema migrations, backfills, indexing, and product changes.
- Led the initiative to develop a common API to drive action on ML model serving such as deployment, canarying, and rollback, simplifying deployments and improving model iteration velocity.
- Developed end to end monitoring in Hub for ML models, including UI surface, out of the box metrics, and APIs for declarative metrics.
- Led organization-wide hiring efforts by developing process and priming a backlog of onboarding tasks for new and prospective team members.

October 2013 to October 2019: Google
Software Engineer – Secure LDAP

- Founded, developed, and launched Google Secure LDAP, a new Lightweight Directory Access Protocol server built on top of Google Cloud Identity.
- Grew and lead the team from zero to 6 engineers as well as PM, QA, and UX roles.
- Coordinated across organizations, solving organizational and technical roadblocks.
- Partnered with customers before and after launch to identify use cases, address product gaps, and optimize performance.
- Drove launch process and reviews, including security, quality, and production.
- Successfully launched the product with industry partners to thousands of companies in the first three months and tens of thousands of companies as of 2023.
- Developed various other enterprise and consumer-facing identity systems for Google and G Suite.
- Technologies used include Java, Golang, Spanner, Protocol Buffers, Stubby, Guice, Flume, and many Google-internal frameworks and systems.

January 2013 to October 2013: Optimizely
Software Engineering Lead – Analytics Backend

- Responsible for development of the analytics backend that powers Optimizely, processing over 2 million events per minute at peak, doubling every 6 months.
- Responsible for technical leadership of the backend team (6 engineers and growing).
- Developed a new streaming methodology for analyzing optimization test results.
- Developed a new methodology for analyzing statistical significance of revenue lift.
- Implemented, in Node, a scalable streaming analytics backend using HyperLogLog probabilistic counting, a Chord distributed hash table, quorum-based replication, and commutative replicated data structures.

- Technologies used include Python, MongoDB, Redis, Node, HBase, Java, Google App Engine, and Amazon Web Services (EC2, S3, ELB, Cloud Formation, Route 53).

October 2009 to January 2013: TripIt
Lead Software Architect – Backend and Web

- Responsible for development of backend, APIs, and web application features.
- Responsible for technical leadership of a team of 8 engineers.
- Integrated with Sabre flight booking system for price monitoring.
- Invented an algorithm to deduplicate travel itinerary data.
- Developed Google Apps integration, OpenID integration with various providers, Zendesk helpdesk integration, and Payflow payment integration.
- Created API bindings in several languages, including Ruby, C#, Perl, and Erlang.
- Worked within and across teams to define technical solutions to business problems.
- Technologies used include PHP, Python, Ruby, C#, Java, Erlang, MySQL, Memcache, Redis, OpenID, and OAuth

May 2009 to October 2009: Hewlett-Packard
Software Engineer – Modular Platform for Server Automation

- Founding member of a small team established to develop a new modular platform for server automation.
- Researched various technologies, developed platform components including database, UI, automated testing frameworks, and modular infrastructure.
- Technologies used include Java, OSGi (Apache Felix and Eclipse Equinox), Eclipse, Maven, Flex, Jetty, MongoDB, CouchDB, Erlang, and Scala.

June 2008 to May 2009: Hewlett-Packard
Software Engineer – Global File System

- Principal developer of the Opsware Global File System, a single file system view of an entire data center.
- Worked on platform support, including Solaris file system kernel module development, debugging with MDB, including writing plugins to facilitate debugging, instrumentation and debugging with DTrace, and post-mortem Solaris 10 kernel core analysis.
- Added automated testing support to various components of the global file system, including the Solaris kernel module.
- Developed native Ruby, PHP, and Perl bindings for the HP Server Automation Unified API.

July 2007 to June 2008: Hewlett-Packard
Software Engineer – Service Automation Visualizer

- Responsibilities included transferring knowledge to other team members and communicating with the larger communities within HP to identify potential for product integration.
- Took the initiative to develop a public API for extending the data center scanning infrastructure with application-specific modules, and developed the first such modules for scanning Weblogic and Oracle servers.
- Introduced unit testing into the project and achieved test coverage of the majority of the scanning infrastructure code.

- Was invited to present technical details of the Service Automation Visualizer at HP TechCon, an annual worldwide interdisciplinary conference of HP technologists. Presented at HP TechCon 2008 in Boston.

April 2006 to July 2007: Opsware
Software Engineer – Visual Application Manager

- Developer of the scanning infrastructure for Opsware Visual Application Manager (HP Service Automation Visualizer), a data center visualization tool.
- Responsibilities included:
    - Developing applications to gather deep system-level detail across a wide variety of platforms, including Linux, Windows, Solaris, AIX, and HP-UX.
    - Developing algorithms to merge and correlate the gathered data into a unified map of the data center.
    - Developing the user interface to visualize the interprocess communication across servers and applications within a data center
- Took the initiative to refactor the scanning infrastructure to improve maintainability and enabled the fast pace of future developments for the next two major product releases.
- Was instrumental in three major product releases, which were ready on time and with zero outstanding high or medium priority bugs.
- Technologies used include C, C++, Python, Java, XML, XSLT, WMI, Solaris KVM, Solaris Zones, and VMware.

April 2005 to April 2006: Opsware
Technical Support Engineer

- Responsible for telephone, e-mail, and on-site support of Fortune 500 customers using Opsware Network Automation System (HP Network Automation), and Opsware Server Automation System (HP Server Automation).
- Responsibilities included finding, reporting and fixing bugs, developing patches, customizations, and content, communicating solutions to customers, and working with customers to implement data center automation tools to solve their business problems.
- Developed extensions using Python and Perl, and bug fixes in Java, C++ and Python.
- Was invited to present at the 2006 Opsware Science Fair, an internal conference of technologists. Presented a way to implement the Opsware Global File System portably using NFS.

June 2003 to April 2005: Isometrix Consulting
Proprietor and Consultant

- Provided system administration and maintenance support, network design and implementation, and consulting to small and medium sized businesses.

June 2003 to December 2004: University of Northern British Columbia
Computer Science Researcher

- Worked under an NSERC Undergraduate Student Research Award, two years in a row.
- Worked in a team to develop a distributed real-time transaction-processing simulator.
- Developed a distributed MPI deadlock detector. Presented and published the paper at IASTED Parallel and Distributed Computing Conference.

June 2001 to August 2002: Orion Information Systems
Software Developer

- Developed custom applications for widely varying clients, including government and educational institutions.
- Developed an off-the-shelf time tracking and project management system for engineering firms.

Projects and Patents

Method and system for detecting duplicate travel path information
Patent filed 2012 and granted 2016 for a novel sequence alignment technique to efficiently reconcile duplicate and near-duplicate travel path information in itineraries.

Eventerator
Developed an event oriented programming model for PHP with continuations to permit synchronous style code to perform asynchronous I/O. It consists of a reactor-style event loop and a continuation passing style transformation for PHP.

Distributed Database in Erlang
Developed a distributed database in Erlang featuring:

- An application layer message routing gateway, which can route messages to any node in the network given only a sparse network topology.
- Three-phase-commit distributed transactions.
- Sharded data storage and arbitrarily high levels of replication.
- Self-organizing system based on the Chord distributed hash table algorithm.
- Distributed hot code deployment.
- Streaming interface built on top of the application level message gateway.

Versioning File System in Ruby

- Developed a file system in pure Ruby as an NFS server, which exports a versioning file system.
- Supports branching and arbitrary point-in-time views of the file system.

Ruby PDF Generator

- Ported and maintain Ruby FPDF (free PDF), a port of the PHP library by the same name.

Ruby Object Database and Object Remoting Library

- Developed an object database in Ruby, using PostgreSQL as a backing store. It provides transparent access to persisted objects and transaction support.
- Developed an object remoting library in Ruby that provides transparent access to remote objects, including distributed reference counting garbage collection and remote exceptions.

Education

University of Northern British Columbia, Prince George, BC, Canada
Bachelor of Science in Computer Science, Minor in Mathematics
GPA 4.16 of 4.33
2004