

JASON BOWMAN

San Francisco, CA

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EDUCATION

The University of Alabama

Masters of Science in Computer Science (MSc), College of Engineering

Tuscaloosa, AL

Dec 2012

- *Select coursework:* Security · Cryptography · Advanced Computer Networking · Compilers

Bachelors of Science in Computer Science (BSc), College of Engineering

May 2011

- *Minor in Mathematics*

SKILLS

- Proficient in application development with Scala, Java, Python, Go, C/C++, Ruby, and UNIX shell scripting.
- Experience with distributed systems, streaming data processing, security auditing, elastic computing, API design, performance optimization, graceful error detection and fault recovery, and full stack application development.
- Experience architecting, scaling, and optimizing high volume QPS applications in hyper-growth environments.
- Experience building developer experience tools, continuous integration systems, and production infrastructure services.
- Over 25 years experience with GNU/Linux and other UNIX platforms.
- Technical project management and organizational leadership experience.

RELATED EXPERIENCE

Highnote

Senior Software Engineer

San Francisco, CA

Aug 2022 - Sep 2023

- Infrastructure engineering for B2B card issuer fintech, focusing on data systems and large-scale platform migrations.
- *Spanner Replication System:* Implemented transaction log replay and mirroring system using Google Dataflow to enable cross-region Spanner cluster replication, ensuring 99.99% uptime for payment processing systems.
- *Platform Modernization:* Led mono-repo wide framework upgrades affecting 50+ microservices. Built custom AST parsing tools and automated migration utilities, reducing manual effort by 80% and eliminating version skew across services.
- Built data pipeline infrastructure for real-time payment analytics and fraud detection, processing millions of transactions daily with sub-100ms latency requirements.

Unity Technologies

Senior Software Engineer / Tech Lead

San Francisco, CA

Jul 2018 - Aug 2022

- Led engineering teams and architected large-scale data platform infrastructure serving Unity's analytics and ML workloads.
- *Data Platform Team Lead:* Led team of 6 engineers in complete re-architecture of analytics ingestion pipeline during AWS to GCP migration. Implemented BigQuery-based data lake processing 1M events/sec (10B daily) using Google Dataflow/Apache Beam.

- *GDPR Compliance & Data Governance*: Designed and implemented end-to-end data encryption and cryptographic protections. Built automated schema inference tools to identify PII in unstructured data, enabling data owners to annotate and classify sensitive information.
- *ML-Agents Cloud Platform*: Architected cloud-native reinforcement learning platform on GKE, providing framework for managing distributed training experiments and Unity simulation builds. Enabled researchers to scale RL training across hundreds of nodes.
- *Unity Simulation & Robotics*: Built remote tunneling infrastructure allowing secure access to Unity instances in shared cloud environments. Developed tooling to bridge on-premise robotics workflows with cloud-based simulation infrastructure.

Uber Technologies, Inc

Software Engineer

Marketplace Engineering // Fares

San Francisco, CA

Jan 2015 - Jul 2018

Nov 2016 - Dec 2019

- Led development of end-user facing product features spanning back-end services and mobile applications.
- *[Tech Lead] Pricing Integrity Engine*: Built real-time and batch data validation platform for fare data with configurable business rules, analytics, and automatic remediation.
- *Fares Platform*: Developed next-generation fare calculation platform for all Uber products using descriptive DSL, integrating tolls, maps, surge, and subscription data.
- *Promotions Platform*: Built auditing and remediation tools for post-transaction analysis of user promotions across real-time systems.

Site Reliability Engineering // Streaming SRE

Dec 2015 - Oct 2016

- Senior engineer on newly formed Streaming SRE team. Led team building and mentored junior engineers while scaling Kafka infrastructure to thousands of brokers processing >500GiB/s across multiple regions.
- *Kafka Infrastructure Projects*: Built intelligent partition redistribution tool achieving optimal load balancing within 0.0001% standard deviation and enabling self-healing of broker failures. Implemented performance optimizations increasing throughput >500% and reducing p99 latencies by 5000%, saving hundreds of millions in projected operational and hardware costs.

Platform Engineering // Data Engineering Embed

Jan 2015 - Dec 2015

- Supported Data organization representing 30% of Uber's hardware footprint. Built automation for provisioning, replication, ETL, and cluster management across Vertica, Hadoop, Redis, and MemSQL.
- Designed data security architecture and compliance tools for global expansion into China, India, and Russia.
- *[Tech Lead] uServer*: Built self-service hardware provisioning platform adopted company-wide, provisioning hundreds of thousands of bare-metal hosts across our datacenters.

Rocket Lawyer

Senior Systems Engineer (original title: Systems Engineer)

San Francisco, CA

Jan 2013 - Jan 2015

- Designed service infrastructure and provided 24/7 on-call support for a high volume e-commerce site in the legal services sector, running primarily on the JVM and a legacy .NET platform. Improved site reliability from 99% uptime to 99.99% and reduced p99 latencies from 2000ms to 150ms.
- Performance analysis and optimization of application services and supporting infrastructure services.

- Extended application code to expose internal application state, key performance metrics, enrich logging, and reduce overall latencies. Implemented dynamic service discovery and reconfiguration via ZooKeeper.
- Built tooling for continuous integration, dynamic configuration management, deployment management, monitoring, and automated incident detection and remediation.

nine.is

Software Engineer / Web Developer

Tuscaloosa, AL

Jan 2012 - Dec 2012

- Full-stack development and team leadership for design company transitioning to in-house software development. Built applications using PHP, JavaScript, and Ruby on Rails.

The University of Alabama

Graduate Research Assistant

Tuscaloosa, AL

Jan 2010 - Dec 2012

- Research on network optimization and security for next-generation internet infrastructure. Developed custom TCP variants and performed security analysis for GENI experimental network testbed.

Brewer Porch Children's Center

Unix Systems Administrator

Tuscaloosa, AL

Aug 2004 - May 2006

- Systems administration for healthcare organization. Managed Linux/Solaris infrastructure and ensured HIPAA compliance for patient data systems.

PUBLICATIONS

- Dawei Li, Jason Bowman, Xiaoyan Hong "Evaluation of Security Vulnerabilities by Using ProtoGENI as a Launchpad", IEEE Globecom 2011, Houston, USA, Dec. 2011.
- M. Anderson, P. Kilgo, and J. Bowman. "RDIS: Generalizing domain concepts to specify device to framework mappings." In International Conference on Robotics and Automation, 2012.
<http://ua-robotics.net/index.php?title=RDIS>

OUTREACH AND COMMUNITY INVOLVEMENT

- Mentor for Hackbright Academy, a 12 week intensive coding bootcamp focused on empowering women aiming to pursue a career in the software engineering field.
- Mentor for dev/Mission, a non-profit program targeting low income youth from 16-24 to expose them to potential careers in technology.
- Organized and ran an introduction to Scala and Functional Programming course based on Martin Odersky's course and book. Resources available on my personal github.
- Served as president from 2010 - 2012 of the Association for Computing Machinery student chapter at The University of Alabama.
- Organized a mentoring/tutoring program for freshman and sophomore computer science students in an effort to improve program retention and graduation rates. Still going to this day, and graduation rates of freshman classes are up from 5% to nearly 50%.

INTERESTS

- **Professional:** GNU/Linux · Distributed Systems · Open Source · System Architecture · Operating Systems · Functional Programming · Stream Processing · Virtualization · Generative Programming · Language Development
- **Personal:** Privacy · Reverse Engineering · Game Development & Theory · Music Production · Electrical Engineering · Embedded Systems · Fabrication and DIY · Robotics · Mechanical Keyboards · CAD Design · Rock Climbing · Emacs