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ABOUT

Researcher by training, engineer by trade. I bridge the gap between deep technology and leadership; I use architecture and automation to accelerate my peers and deliver quantifiable improvements to their day-to-day.

WORK HISTORY

Staff Engineer
Aspect Build Inc.

March 2025 - Present

- **@aspect_rules_python** - Drove deep Python investments as part of Aspect's AI/ML support product and market positioning. [Designed](#) and owned the development of a new way to install Python packages under Bazel, addressing longstanding architectural problems in the Python ecosystem. Developed a new Python binary implementation to facilitate JAX and Nvidia libraries. Partnering with Astral to provide refined Bazel stories for their Rust tooling for Python.
- **Aspect CLI** - Led early development of the v2 of the Aspect CLI, prototyping its migration from Go to Rust. Proposed the use of Starlark (later AXL) to define CLI tasks and delivered prototype implementations of key tasks.
- **@aspect_tools_telemetry** - Designed and released Bazel integrated, privacy-conscious telemetry for Aspect's rulesets. Delivered data insights facilitating both ruleset product investments and sales efforts.

Sr. Software Engineer

November 2022 - January 2025

Abnormal Security Inc., Engineering Effectiveness Team

- **Bazel owner** - Owned the bazel build and CI experience for a 175 committer monorepo. Internally championed Bazel adoption and led efforts to improve engineers' Bazel experience. Authored Abnormal's first Bazel/CI investment roadmap and championed resourcing it. Led the "bazelification" of a Pytest suite, reducing average Python CI times 50% and Golang times by 90%. Supported a junior engineer taking over the CI and delivering further time and cost optimizations.
- **Python expert** - Developed custom Django-aware static analysis tools to facilitate the untangling of a Python monolith. Worked to socialize microservice and separation best practices. Pioneered a Bazel-native application pattern, unlocking test overheads of seconds instead of tens of minutes.
- **Observability owner** - Prometheus, Grafana and Chronosphere owner. Consulted with service owner teams to help develop and manage their metrics utilization. Developed custom PromQL analysis and refactoring tooling. Used detailed PromQL analysis to drive optimization which avoided \$7M of recurring costs.

Software Engineer
Divebell Inc.

December 2021 - November 2022

- **Deploy automation** - Developed a custom release packaging installation mechanism, reducing new customer installs and customer upgrades from a multi hour manual process to a single copy-paste.
- **Reliability assurance** - Worked on PII scanning reliability, retrofitting back-pressure, state tracking and retry mechanisms to resolve persistent architectural issues with failed scans.
- **Custom data collection** - Investigated and implemented customized PII scanner support for data lake file formats like Apache Avro and ORC.

Sr. Software Engineer **January 2019 - September 2021**
Twitter Inc., Core Infrastructure Provisioning Automation

- **Cloud migration planning** - Drove a cloud migration effort for Twitter's server fleet source of truth, enabling expansion of Twitter serving into cloud regions. Mapped mitigated extensive dependencies within legacy stacks as blockers to Kubernetes and cloud migrations, necessitating decoupling and re-alignment with cloud patterns in the legacy stack to achieve desirable outcomes.
- **Third datacenter buildout** - Worked to plan manage risk in the deployment of Twitter's third data center. Developed, socialized and drove a backhauling plan for bootstrap and validated it on foundational services to replace untested bring-up procedures. Delivered foundational capabilities with minimal engineering effort months ahead of schedule.
- **Disaster management** - Responded to Twitter's first whole compute platform outage, involving the loss of all services in a facility. Led the authoring of a facility bootstrapping plan, involving ordered service bringup spanning 11 peer teams. Enabled recovery of the facility and restoration of traffic over the next 36 hours, rather than the weeks feared in the early hours of the outage. The plan has become the basis of recovery plans for Twitter's planned outage testing.

Software Engineer **December 2017 - January 2019**
Funding Circle Inc., Accounting Engineering Team

- **Ledger traffic testing** - Worked with business partners to model traffic from core workloads and estimate future demands. Developed traffic generation based on this model, and a benchmarking tool specialized to queued system dynamics. Conclusively demonstrated that the candidate ledger could not sustain production objectives as originally designed.
- **Ledger re-architecture** - Defined, implemented and evaluated a replacement ledger architecture which could meet business production requirements by adopting, heavily evaluating and installing backstops for Kafka 1.0's "exactly once" message processing semantics. Leveraged the performance testing tools to show that the transactional ledger exceeded business requirements handily.
- **Ledger migration** - Worked to develop a deployment plan for executing and validating a one-time cutover over from the previous ledger system to the new accounting stack. Successfully executed the migration, delivering on Funding Circle's three year business objective of decommissioning the legacy ledger system.

Site Reliability Engineer II **May 2016 - November 2017**
Twitter Inc., Core Infrastructure Services SRE

- **Datacenter fleet management** - Worked to reduce fleet management toil and human intervention to recover failed automation by designing, developing & deploying a durable functions engine specialized to capturing error conditions and describing complex retrying. Increased the reliability of key fleet operations from sub-50% to 95% using this tool, eliminating multiple legacy systems.
- **Core operations** - Participated in development and oncall for tier-0 services including Puppet, DNS, Kerberos, NTP and other infrastructure.

Independent Contractor **May - August 2014**
Google Inc., Google Summer of Code

- Designed & implemented [an ahead of time compiler](#) for Clojure
- Implemented static use set & reach set analysis, tree shaking & λ lifting
- Produced a 15% speedup on "typical" programs & 24% on benchmarks

EDUCATION **Bachelor of Science & Arts** Univ. Texas at Austin **May 2016**
Majoring in Computer Science through the Turing Scholars honors program.