Bryan (Alex) Landau

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I am a software engineer specializing in site reliability and platform engineering. I've delivered many impactful projects with large scope. I'm passionate about building scalable systems, working on challenging problems, and helping other engineers grow.

Education and Technical Skills

University of Virginia School of Engineering *August 2009 - May 2013*
and Applied Sciences *Charlottesville, VA*
B.S. in Computer Science

Programming Languages
Proficient in Python, Java, Javascript, HTML/CSS, various Shell flavors
Frameworks
Extensive experience with Flask and Django, many AWS services, Docker, Kubernetes, Terraform
Datastores
Amazon DynamoDB, MySQL, Postgresql, Memcached, Redis, InfluxDB

Professional Experience

Staff Software Engineer *September 2020 - Present*
Rover - Site Reliability *Seattle, WA*
- Built and managed automated process for managing 500+ monitors for all aspects of Rover's business
- Ongoing, more to come!

Senior Software Engineer *April 2019 - September 2020*
Rover - Site Reliability *Seattle, WA*
- Planned and lead Python 3 migration with a team of 3 engineers. Upgraded 200+ dependencies, 700,000+ LLOC, and ~5,000 unit tests. Performed phased production rollout with minimal customer impact and delivered project 4 months before Python 2 end-of-life
- Established formal incident postmortem process capturing metadata on 200+ production incidents at Rover to drive fewer customer-reported incidents, improve monitoring capabilities, and evangelize observability best practices across the engineering organization
- Contributor to Rover's engineering blog, which contains entries on some of the projects discussed in my resume: engineering.rover.com

Software Engineer *August 2017 - April 2019*
Rover - Site Reliability *Seattle, WA*
- Reduced peak master database CPU utilization from ~70% to ~20% in spite of 2x YoY query volume growth by introduced robust observability to the engineering organization allowing us to identify query performance issues
- Designed, implemented, and rolled out highly available SMS ingestion service utilizing Amazon DynamoDB to decouple message ingest from backend processing, which mitigated the impact of several major backend processing outages. Zero downtime and customer impact during the rollout
- Implemented zero downtime database migration pipeline to mitigate availability risks with existing system. Pipeline has run 200+ successful migrations
- Rolled out asynchronous I/O to dozens of production web servers to mitigate availability risks from third-party outages

Software Development Engineer II *August 2015 - July 2016*
Amazon - **Search Experience** *Seattle, WA*
- Implemented critical solution in conjunction with several other organizations to reduce unnecessary downstream traffic by >99%, enabling downstream systems to handle the massive scale accompanying Amazon's Prime Day. Facilitated load testing of this solution prior to Prime Day 2016

- On-call for the primary services powering Amazon's search, which handle peak traffic of >10,000 requests per second. Drove resolution for dozens of high severity customer-impacting issues. Helped improve operational excellence of team by removing redundant alarming and adopting metrics-based system monitoring
- Worked on >500,000 LLOC codebase involving hundreds of developers across multiple organizations

Software Development Engineer   *June 2014 - August 2015*
Amazon - **Marketplace**   *Tempe, AZ*
- Developed critical infrastructure as part of multi-year migration from legacy Oracle database to a scalable DynamoDB based solution, with design vetted by Amazon Principal Engineers. This service handles >5000 requests per second worldwide, with >five 9s of Availability
- Resolved internal and external customer issues involving simple database updates to large-scale customer migration script
- Worked on small team of fewer than 12 developers managing dozens of microservices, including development, testing, on-call rotation. All code written met unit testing quality bar of >90% coverage

Software Development Engineer in Test   *August 2013 - June 2014*
Microsoft Corporation - **Application Insights**   *Seattle, WA*
- Leveraged existing frameworks from different groups to implement a UI automation framework for web-based product portal, along with ~20 automated test cases for critical functionality (~20k LLOC of C# within framework, ~2k LLOC written by me)
- Automation framework revealed several product bugs, many of which I also fixed
- Maintained development environments utilized by entire product team

DevOps Intern   *May 2012 - August 2012*
WillowTree Apps   *Charlottesville, VA*
- Worked on large-scale Django project developing API endpoints and fixing bugs (~26k PLOC in Python)
- Developed tools for management of and worked with backend databases (Postgresql and Redis)
- Researched potential uses of graph databases and presented findings to the company

Undergraduate Researcher at University of Virginia   *June 2011 - February 2012*
Programming Languages Group (under Wes Weimer)   *Charlottesville, VA*
- Published peer-reviewed research paper at the International Symposium on Software Testing and Analysis (28% acceptance rate), "A Human Study of Patch Maintainability." http://dl.acm.org/citation.cfm?id=2336775
- Helped organize and carry out a human study to investigate software maintainability, involving examination of open source C programs and the collection of data from over 150 participants and statistical analysis of data
- Contributed to a long term, ongoing research project involving >14000 PLOC in OCaml

Open Source Contributions

dogstatsd-collector (github.com/roverdotcom/dogstatsd-collector)
- Library for collecting DataDog StatsD metrics for deferred flushing
- Used in Rover's production systems for observability

Speaking

For video recordings of talks see alexlandau.dev/#speaking

"Making Observability Frictionless"   *August 2020*
Dash 2020   *Global*
- Discussed how we've made observability easy to adopt and how we've driven outcomes from observability culture at Rover
- Virtual audience of ~4,000 attendees. Talk was ~45 mins including questions

"Building a Culture of Observability" *May 2019*
PyCon 2019 *Cleveland, OH*
- Spoke about Rover's observability philosophy, some of the tools we've built, and the achievements we've made
- Audience of ~300, Talk was ~30 mins including questions

"Achieving Huge Performance Wins with *April 2019*
DataDog" *Seattle, WA*
DataDog Summit Seattle 2019
- Invited by DataDog to speak about the query performance issues we've resolved using DataDog's observability tools
- Audience of ~200, Talk was ~20 mins Also participated in discussion panel

"Tips and Tricks for Building a Scalable Cloud *March 2015*
Service" *Tucson, AZ*
HackArizona 2015
- Tech talk presented to college students during a hackathon at the University of Arizona on behalf of Amazon
- Room at capacity with >50 in attendance. Talk was ~40 mins with ~20 minutes of questions

Various talks at Puget Sound Programming Python (PuPPY), Seattle's largest Python user group

Teaching

Teaching Assistant *February 2019 - Present*
Ada Developer's Academy *Seattle, WA*
- Ada Developer's Academy (adadevelopersacademy.org) is a non-profit, tuition-free coding school for women and gender diverse adults
- Weekly teaching assistant helping students work through coursework, answering questions, and facilitating learning
- 2 hour weekly commitment

High School Computer Science Teacher *August 2014 - May 2015*
TEALS at BASIS Phoenix *Phoenix, AZ*
- Co-taught Advanced Placement (AP) Computer Science to 15 high school students, along with the primary teacher at the school and another volunteer through the TEALS (Technology Education and Literacy in Schools) program (microsoft.com/en-us/teals)
- Walked students through basic programming language concepts including variable assignment, branching, loops, classes, objects, polymorphism, and recursion in preparation for the AP test.
- 86% of students passed, as compared to 71% the previous year and 65% worldwide. Of the passing students, 85% received a score of 5 or 4

Computer Science Tutor *Spring 2013*
University of Virginia *Charlottesville, VA*
- Tutored 4 students in various introductory CS classes throughout the semester, helping them study for exams and assisting with homework questions for approximately 10 hours/week

Teaching Assistant for "Program and Data Structures" *Spring 2012*
University of Virginia *Charlottesville, VA*
- Helped students learn basic C++ and accomplish weekly programming assignments
- Graded assignments, helped proctor weekly labs and periodic exams, and held weekly office hours