

Justin Birmingham

jbham184 [at] gmail.com • jbirms.net • github.com/jbirms • he/him • Brooklyn, NY

Experience

EnergyHub - Brooklyn, NY

September 2016 – November 2019

Software Engineer

- Wrote and maintained several integrations with smart home device APIs, using various languages and protocols
- Diagnosed and fixed issues in a complex distributed system as part of an on-call rotation with 99.999% uptime requirements
- Designed and built a distributed weather data service in Python 3 that consumes historical and forecast data from government sources and caches them in memory and in DynamoDB for fast querying across several Thrift-generated internal clients
- Built a Dockerized Nginx service that uses 2-way SSL to authenticate users and act as a reverse proxy to pass unencrypted traffic
- Assisted in the splitting of a monolithic Java Spring app into several Dockerized microservices that communicate via RabbitMQ
- Improved the monitoring and alerting stack with AWS Lambda, CloudWatch, Graphite and Grafana dashboards
- Built several internal dev tools, like a GitHub webhook for Jira, slack alerting notifications for failed Jenkins deploys
- Handled DevOps maintenance tasks, like upgrading MongoDB clusters or launching new VPC environments for demos
- Migrated project tracking system from Trac to Jira, and the wiki from MediaWiki to Confluence, using regex and RPC APIs
- Grew from a junior engineer to a core contributor and mentored junior engineers through pairing and extensive code reviews
- Interviewed dozens of candidates and participated in meetings about how to improve team culture, structuring, and efficiency

Ecorithm - New York, NY

September 2015 – April 2016

Building Data Analyst

- Created physics-based rule functions in Groovy to run various analyses on sensor data to find efficiency problems in buildings
- Wrote python and bash scripts to generate d3.js visualizations of how building systems are connected to each other

Skills & Tools

- Writing and reviewing software in Python, Java, JavaScript, Go, Bash scripting, some C, C++, HTML, CSS
- AWS management, using EC2, ECS/Fargate, ECR, VPC, ELB, Route53, CloudWatch, S3, IAM, DynamoDB, RDS, Lambda, Batch
- Builds, cloud deployment and configuration using Ansible, Jenkins, Travis, Docker
- Test-driven development with JUnit, Selenium, Cucumber, unittest, Mockito, Chai, Testify
- Configuring database clusters, indices, and queries with MongoDB, MySQL, DynamoDB, and Redis
- Firefighting production issues using PagerDuty, CloudWatch logs, Sentry, Wireshark
- Managing and documenting projects with Jira, Trac, Monday, Confluence, MediaWiki
- Strong physics and math skills, data analysis and visualization using Numpy, Pandas, matplotlib, and d3.js

Education & Projects

Columbia University - New York, NY

August 2011 - May 2015

Bachelor of Science in Mechanical Engineering **Minor: Music**

- Built a robotic bass guitar for senior project with arduinos, raspberry Pi, stepper motors, laser cutter, and CNC milling machine
- Coordinated the Columbia Outdoor Orientation Program's 4-day bike camping trips with 15 leaders and 55 incoming first-years
- Co-founded the Columbia University Renewable Energy Society, was in the composting club, lived in the sustainability house
- Sang a cappella with Notes and Keys, and worked multiple jobs during school, on and off campus

Recurse Center - Brooklyn, NY

May 2016 - August 2016 & November 2019 - December 2019

- Self-taught Go with a test-driven approach, and created a project that creates face-zooming animated gifs using face detection
- Worked on a solar energy analysis project to figure out solar energy output at any given point along a solar car's trip
- Created some generative art using p5.js, gave a few talks about various technical and nontechnical subjects

Bike and Build - Rode a bicycle from Connecticut to California for affordable housing

Summer 2015

Multi-instrumental Musician - Bassist in an indie rock band called Togs, gigs regularly around NYC

July 2017 - Present