NATHAN JIANG
SOFTWARE ENGINEER

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EDUCATION

University of Waterloo
Software Engineering 2021
Candidate for Bachelor of Software
Engineering (B.SE)

SKILLS

DEVELOPMENT: Python, C/C++, Go, Javascript, Ruby, Bash, Flask, Ruby on Rails, Django, Node.js, HTML/CSS, Git
INFRASTRUCTURE: Docker, Kubernetes, Jenkins, AWS, GCP, ElasticSearch, Kafka, gRPC, Sidekiq, PostgreSQL, MongoDB, Redis, Memcached, NGINX

EMPLOYMENT

TWITCH.TV   Sept. 2018 to Dec. 2018
Software Identity Intern
- Replaced existing server-worker infrastructure by implementing serverless, lambda-driven architecture for batch job processing. Lambda consumes from AWS SQS to delete account connections between Twitch and other games.
- Migrated the legacy channels API, **servicing over 1000 requests per second**, from a monolithic Rails application to a new Go-based service. Allowed for the exiting of Rails entirely **resulting in savings of over $80,000 per month.**
- Partnered with security to develop a compromised credentials pipeline using AWS Lambda, S3, and API Gateway. Consumes leaked password dumps to identify Twitch accounts with potentially undermined credentials and issues a bulk password reset on these accounts.
- Spearheaded the initiative to **analyze over 275 million entries in accounts database**, identify and purge over 2.6 million obsolete records used to reserve logins, and migrate important users to a new reservations database.

UNIVERSE   Jan. 2018 to Apr. 2018
Infrastructure Engineering Intern
- Migrated production infrastructure from AWS to GCP by designing custom Kubernetes/Helm implementations for Ruby on Rails stack. **Reduced CPU and RAM requirements by up to 35% without performance loss** by leveraging Kubernetes to share idle resources and co-locating processes to reduce network latency. **Decreased average deployment time to production environments by 65%.**
- Increased system performance visibility by constructing Grafana dashboards using Prometheus and Collectd data exporter on Kubernetes clusters to monitor container and host resource usage, network traffic, and application metrics
- Implemented a data processing/anonymization pipeline using Apache Beam and Google Cloud Dataflow. Decreased average seeding time from 60 minutes to 90 seconds (**approximately 4000% improved performance**).

WIZELINE   Apr. 2017 to Aug. 2017
Software Engineering Intern
- Implemented RESTful backend API for Wizeline Roadmap using Python, Flask, PostgreSQL and gRPC.
- Automated the congregation of usage statistics for Roadmap via data mining techniques applied to PostgreSQL databases. **Aggregated over 2 million event records** from ElasticSearch, Logstash, and Kibana.

PROJECTS

KUBE-PROMPT   Mar. 2018 to May 2018
- Interactive Kubernetes command line interface featuring auto-complete and resource suggestions written in Golang
- Open source project with over 500 stars on GitHub

STROIT.LIFE   Nov. 2016 to Apr. 2017
- Web application utilizing Google's Direction API in conjunction with over 1 million entries of local statistical crime data to find safe walking paths through Detroit
- Augmented Google's path-finding algorithm to greedily produce several routes which optimize the tradeoff between safety and walking distance

AWARDS

WATERLOO ENGINEERING COMPETITION   Nov. 2016
- 2nd Place in the team programming division.
- Constructed and implemented a weighted Stable Marriage Problem algorithm