

Fan Pu Zeng

SYSTEMS AND INFRASTRUCTURE ENGINEER

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Summary

I have industry experience working on both full-stack web applications and infrastructure at scale. I have deep UNIX knowledge and love playing cybersecurity Capture-The-Flag competitions. I enjoy learning new things and I am interested to work on challenging problems in systems, cybersecurity, and infrastructure.

Education

Carnegie Mellon University

Pittsburgh, PA, USA

B.S. IN COMPUTER SCIENCE WITH A CONCENTRATION IN COMPUTER SYSTEMS

Aug. 2018 - Expected May. 2022

- GPA: 4.0, Dean's List
- Member of the Plaid Parliament of Pwning (PPP), CMU's competitive hacking team. I specialise in binary exploitation and reverse engineering.
- Selected courses:
 - Cloud Computing (Skills: AWS, Azure, GCP, Terraform, Docker, Kubernetes, MySQL, MongoDB, HBase, Neo4j, Hadoop MapReduce, Spark, Kafka, Samza)
 - Operating System Design and Implementation
 - Compiler Design
 - Database Systems
 - Introduction to Computer Security
 - Introduction to Computer Systems
 - Algorithm Design and Analysis
 - Undergraduate Complexity Theory
 - Parallel Data Structures and Algorithms
 - Great Theoretical Ideas in Computer Science
 - Foundation of Programming Languages
 - Principles of Functional Programming
 - Electronics

Work Experience

Facebook

Menlo Park, CA, USA

PRODUCTION ENGINEER INTERN (TUPPERWARE SCHEDULER TEAM)

May 2020 - Aug 2020

- Designed and built a performance testing tool from scratch for Facebook's deployment system for internal backend services, Tupperware. The Tupperware Scheduler, which is in charge of allocations, healthchecks, and migrations on millions of servers daily, is targeted.
- Performance testing is achieved by replaying requests against a test Tupperware scheduler to benchmark performance
- Enhanced tool to record production requests by shadowing requests for Service Router, Facebook's internal fault-tolerant routing framework
- Queried metrics like CPU, memory usage, latency, errors, from the Operational Data Store (ODS) in order to detect regressions in scheduler performance
- Bundled tool with Facebook's internal packaging system fbpkg and configured it to run daily in production with Chronos

Asana

San Francisco, CA, USA

SOFTWARE ENGINEERING INTERN (INFRASTRUCTURE MANAGEMENT)

May 2019 - Aug 2019

- Achieved better infrastructure modularity and significant cost savings by improving in-house Kubernetes deployment framework on AWS to allow worker clusters to share EKS control planes. Used Python, Boto3, CloudFormation extensively.
- Served twice as Infrastructure Management On-Call to investigate, triage, and fix infrastructure failures on Linux-based systems including infrastructure breakages due to bad commits by other developers, CI/CD pipeline failures, Kubernetes deployment failures, AMI build failures, AWS rate-limiting problems, Datadog alerts
- Created testing framework for Pylint lint rules to be run during the Bazel build process

Autolab

Pittsburgh, PA, USA

OPEN SOURCE PROJECT LEAD

Nov. 2018 - Current

- Lead development and maintenance of Autolab, an open-source auto-grading platform for programming assignments used by 5000 students in CMU and 20+ universities worldwide. Used Rails, Javascript, Python, Redis, and MySQL.
- Improved adoption by simplifying Autolab setup flow by using Docker Compose to automate provisioning of frontend and backend grading servers

Saleswhale (YC S16)

Singapore, Singapore

JR. SOFTWARE ENGINEER

Nov. 2017 - Aug. 2018

- Regularly delivered core product features and bug fixes for the Saleswhale app with Rails, Ember.js, RSpec, Redis, Sidekiq.
- Enabled enterprise account management and onboarding by building an internal tool from scratch with Rails, Ember.js, RSpec, SemanticUI, Gulp.
- Drastically reduced product testing times by building a testing micro-service with Rails, AWS SQS, Docker, Fabric from scratch

Honors & Awards

- 2020 **Second Place**, DEF CON 28 Capture-The-Flag Competition
- 2019 **Third Place**, CSAW Capture-The-Flag Competition
- 2019 **Second Place**, CSAW Security Quiz Bowl
- 2018 **First Place**, Home Invasion 2018 (IoT-CTF)
- 2018 **Winner, People's Choice**, NUS Hack&Roll 2018
- 2015 **Silver Award**, National Olympiad in Informatics

Las Vegas, NV, USA

NYC, NY, USA

NYC, NY, USA

Singapore

Singapore

Singapore