Curtis Fenner

Tokyo, Japan

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Experience

PayPay — Software Engineer, Online
Remote, Jun. '21–Apr. '22 · Tokyo, Japan. Apr. 2022–current

- Backend engineer on the Online team, which provides internal & external APIs for accepting online payments
- Implemented new gateway services to enable more merchants to accept PayPay
- Designed APIs and documentation for merchants integrating with new PayPay features
- **Technologies**:
  - **Spring Boot**, **Java**, & **Kotlin** – for backend implementation
  - **AWS** – for cloud hosting

Square — Software Engineer, Orders API
Atlanta, GA. Aug. 2018–Dec. 2020

- Backend engineer on the Orders API team, which operates both a public REST API, as well as internal systems that serve Square Point-of-Sale mobile apps
- Responsible for designing, reviewing, and implementing features that integrate with many other microservices including for payments, catalog, customers, and fulfillments
- Work emphasizes designs that are maintainable, scalable, strongly consistent, and highly available
- **Technologies**:
  - **Java** – for API server implementation
  - **Protocol Buffers** – for RPCs, modeling the API schema, and database serialization
  - **TypeScript & JavaScript** – for building internal web interfaces
  - **MySQL** – for durable, distributed storage enabling a strongly consistent API experience
- Refactored complex validation logic to greatly improve test coverage and reduce maintenance burden
- Created reusable library functions to support older API versions with minimal effort
- Wrote and presented thorough documentation for complex internal calculation logic

Qualtrics — Software Engineer Intern, Data Platform
Seattle, WA. Summer 2017

- **Technologies**:
  - **Scala** – for backend implementation
  - **Elasticsearch** – for aggregating metrics to produce custom reports, and for log analysis
- Redesigned a data aggregation feature to get correct weighting across different displays

Qumulo — Software Engineer Intern, Filesystem Performance
Seattle, WA. Summer 2016

- **Technologies**:
  - **C** – for filesystem server implementation
  - **Python** – for integration-test automation and code generation
- Doubled free-space reclamation rate by implementing sharding for large file deletion
- Eliminated lock contention in a multithreaded cache to reduce file operation latency
- Implemented disk block allocation changes to ensure significantly faster metadata operations

Square — Software Engineer Intern, Public API
San Francisco, CA. Summer 2015

- Wrote Go and JavaScript (Node.JS) as member of public API team
- **Technologies**:
  - **Node.JS** – for implementation of microservice serving public API
  - **Go** – for implementation of a new microservice to eventually replace the Node.JS server
- Optimized and refactored public API server to halve average response time

Education

University of Michigan: Computer Science B.S.E, 4.0 GPA
Ann Arbor, MI. 2014 – 2018

- **Selected Coursework**: Distributed Systems (W2017), Grad. Programming Languages (F2017)
- Teaching assistant for Distributed Systems (F2017)
- World Finalist in 2017 ACM International Collegiate Programming Contest (ICPC)

Selected Projects

Shiru Programming Language & Compiler
https://github.com/CurtisFenner/shiru-ts

- Designed and implemented a toy programming language, compiler, and assertion verifier, including
  - a PEG parser library
  - a type-checker (including generic functions/types)
  - a simple interpreter
  - a rudimentary CDCL-based SMT solver

Updated June 2022.