Ying (Freya) Luo

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EDUCATION

Carnegie Mellon University **Dec 2022**
Master of Science in Electrical and Computer Engineering *Pittsburgh, PA*

University of Waterloo **Jun 2020**
Bachelor of Science | Dean's Honours List *Waterloo, Canada*

SKILLS

Languages: Java, Python, C++, JavaScript/Typescript, HTML, CSS, Kotlin, SQL, Shell, YAML, GraphQL
Frameworks & **Platforms**: React, Vue, Django, NodeJS, jQuery, MySQL, MongoDB, Apollo, Dagger, Guice, Spring MVC
Tools & **Methodology**: Maven, Gradle, AWS, Docker, Tomcat, Git, GDB, ROS, CI/CD, Progressive Web Apps

WORK EXPERIENCE

Amazon Web Services, Inc. Seattle, Washington
Software Development Engineer, Cryptography Intern *May 2022 - Aug 2022*

- Designed a standalone Java-based Lambda service serving ACM team's core APIs, which generates certificate signing requests and encrypts private keys; Implemented dependency injection using Dagger2 and built service with Gradle Kotlin DSL
- Configured service cloud infrastructure and development stacks via AWS CDK based on Typescript; Applied efficient CI/CD strategy by enabling pipeline to automatically promote and deploy new code changes, and log error causes if failure occurs
- Created and added alarms to service metrics (e.g., Fault rate, Latency) to monitor and alert for server; Enabled hydra integration tests and hydra canary tests, under which server's success rate achieved 100% with 1 execution/min testing rate
- Integrated server to ACM main service and solved compatibility issues to improve ACM's security posture; Accomplished latency decrease by around 6% - 8% on average than that before service integration

IFLYTEK Corporation Anhui, China
Software Engineer, Intern *Oct 2020 - Dec 2020*

- Launched a medical audit system Vue web application serving 50+ hospitals; Cooperated with 15+ engineers to extend online doctor consultation service using React Native on both iOS and Android system
- Established a competitive diagnostic analysis web service, which generated medical reports based on data modeling and analyzing, saving up to approximately 200% consultation time compared to traditional processes
- Remodeled asynchronous data fetching APIs and database schema with team members for optimizing service performance (cases: heavy user data input, massive network requests); Tested and verified near 40% enhanced work efficiency

University of Waterloo Waterloo, Canad
Research Assistant *Jan 2019 - Apr 2020*

- Wrote a Python program to identify the most stable molecular structure of Beryl crystal interacting with water
- Troubleshot potential bugs, reorganized code structure and cached matrix multiplication result; Optimized program's execution time (from ∼18hrs to ∼4hrs) with 450% increase than the initial version

PROJECTS

Browser-based Code and Text Editor *Jan 2022 - Mar 2022*

- Developed an interactive coding environment with React, Typescript, and Redux middlewares to handle code execution logic
- Leveraged Web Assembly to transpile and bundle code directly in browser supporting CommonJS and ES6 Modules syntax
- Secured app against attacks due to potential security exploits by minimizing cross-domain communication among code cells
- Refactored app in a package-based architecture; Automated NPM registry packages deployment utilizing Lerna CLI

Clothing Website - Progressive Web App *Jan 2022 -May 2022*

- Built a full-stack e-commerce website adding mobile responsiveness feature; Set up Firebase database and authentication flow to store items data and verify users identity; Attached security rules to Firestore to restrict Write access to admin user
- Gained the control of dictating returned data type and shape from database by incorporating GraphQL and Apollo client
- Migrated application to progressive web app to optimize its performance and deployed it to production through Netlify hosting

JSON Form Generator *May 2022 - July 2022*

- Created a dynamic Vue3 form generator that transforms input JSON object to Forms bundled with fully-functioned validators
- Enhanced components reusability and extensibility by introducing Provide and Inject API; Fulfilled 90% unit tests coverage
- Extended functionalities to allow users applying own widgets, Ajv format and keyword plugins to customize and validate form

File Caching Proxy *Feb 2022 - Mar 2022*

- Designed a robust distributed system for concurrent files caching with check-on-use protocol and open-close session semantic
- Implemented LRU replacement policy in which file metadata is stored in cache block objects; Improved server performance through transferring huge file in chunks and buffering file content when necessary