

Ying (Freya) Luo

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EDUCATION

Carnegie Mellon University

Master of Science in Electrical and Computer Engineering

Dec 2022

Pittsburgh, PA

University of Waterloo

Bachelor of Science | Dean's Honours List

Jun 2020

Ontario, 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.

Software Engineer, Intern at AWS Certificate Manager (ACM) team

Seattle, Washington

May 2022 - Aug 2022

- Designed a standalone Java-based Lambda service, which generates certificate signing requests and encrypts certificate private keys, fronted by API Gateway serving team public core APIs to improve ACM's security posture.
- Implemented dependency injection using Dagger2 and Guice; Built service with Gradle Kotlin domain-specific language (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 stack trace if failure occurs.
- Created and added alarms to service metrics (e.g., Fault rate, Latency) to monitor server's behaviors; Enabled hydra canary tests, in which server's success rate achieved 100% under 1 API invocation/min testing rate and multiple concurrent requests.
- Integrated server to ACM main service and solved compatibility issues; Accomplished latency decrease by around 6% - 8% on average than that before service integration.

IFLYTEK Corporation

Software Engineer, Intern

Anhui, China

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 systems.
- 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 in case of heavy user input or massive network requests; Tested and verified near 40% enhanced work efficiency.

University of Waterloo

Research Assistant

Waterloo, Canada

Jan 2019 - Apr 2020

- Wrote a Python program to identify the most stable molecular structure of Beryl crystal interacting with water.
- Troubleshoot 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 limiting 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 features; 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 flexibility by controlling returned data type and shape from database via incorporating GraphQL and Apollo client.
- Migrated application to progressive web app to optimize its performance and deployed it to production through Netlify.

JSON Form Generator

May 2022 - July 2022

- Created a dynamic Vue3 form generator that transforms input JSON object to Form 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 widgets, Ajv format and keyword plugins to customize and validate forms.

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.