

Jacky Liu Software Engineer

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EDUCATION

CARNEGIE MELLON UNIVERSITY

Bachelor of Science, Computer Science

Pittsburgh, PA

May 2022

PROFESSIONAL EXPERIENCE

CAPITAL ONE

Software Engineer

San Francisco, CA

Aug 2022 - Present

- Worked on two backend **scrum** teams responsible for developing and deploying scalable solutions for **Enterprise Data Lineage**—tracking the intricate flow of data and ensuring robust data governance on **AWS infrastructure** and **Enterprise Data Monitoring & Alerts**—building infra to track and monitor SLA violations, including the ability to set up monitors and send notifications downstream.
- Independently proposed and executed end-to-end architecture development for **API** services and serverless **Lambda** functions used by upstream components and internal customers, leveraging AWS DynamoDB, S3, SQS, and other components.
- Created **3** reusable and modular common libraries that ensure standardization of data models, DynamoDB operations, utilities, and **Kinesis** message serialization/deserialization, which serve as foundational components widely leveraged in **7+ different projects**.

CARNEGIE MELLON UNIVERSITY

CS Teaching Assistant

Pittsburgh, PA

Jan 2021 - May 2021

- Led weekly lab sessions and office hours to instruct students in various CS topics & debugging practices.
- Provided feedback and guidance on **12+** assignments, **10+** labs, and the end-of-semester term project to a class of **100+** students.

IDENTALSOFT

Software Engineer Intern

Milpitas, CA

June 2019 - Aug 2019

- Developed a Java application leveraging Microsoft's USB video class (UVC) API to seamlessly integrate Dental Intra-oral Cameras, enabling direct transfer of high-quality image data into the software.

PROJECTS

Core Notification Generator API Service

Sept 2023 - Nov 2023

- Designed and implemented a robust **API service** in Scala end-to-end with **POST, PUT, GET, DELETE endpoints**, seamlessly integrated with **DynamoDB** for efficient write and read operations.
- Wrote comprehensive unit tests leveraging Mockito, integration tests, and executed blackbox testing in Postman/AWS, ensuring the reliability and functionality of the system. Deployed through **Jenkins pipeline** and thoroughly tested the solution in **Dev/QA/Prod** environments, with **80%+ test coverage**.
- Authored design documents detailing the **API** endpoints, payloads, processing logic, and expected behaviors for internal customers.
- Used by our frontend team to effortlessly transmit notification entities downstream to address SLA (Service Level Agreement) violations promptly, significantly contributing to meeting SLA benchmarks.

DataMart Metadata Retriever

July 2023 - Sept 2023

- Developed a parallel and serverless metadata parser with **Scala ZIO** and **AWS Lambda**, a pivotal element within the DataMart V2 architecture, including comprehensive unit tests and integration tests with **80%+ test coverage** to ensure reliability.
- Seamlessly leveraged **DynamoDB** and an internal **API** endpoint for efficient dataset lookup, followed by formatting of the output before dispatching it to **Amazon SQS** (Simple Queue Service).
- Significantly increased the number of datasets that can be processed daily up to **500K** (from **92K** in DataMart V1), a crucial improvement as the number of seed datasets was expected to double in 6 months.

SKILLS & CERTIFICATIONS

- **Certifications:** Amazon Web Services (AWS) Solutions Architect Associate - Achieved April 2022
- **Languages:** Proficient: Scala, Java, Python. Intermediate: C, Bash
- **Tech:** AWS (Lambda, DynamoDB, SQS, Cloudwatch, S3, EC2, Kinesis, Neptune), Postman, Jenkins CICD, SBT/Maven, New Relic, Splunk, Mockito, ZIO, Git, Jira/Scrum, Docker