XI (ROBBY) QIU

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WORK EXPERIENCE

Machine Learning Engineer – PayPal   *San Jose, CA* | **Mar 2025 – Present**
- Designed and implemented a multi-agent AI system for Suspicious Actor Report (SAR) generation using Gemini, Next.js, and, FastAPI. The system performs risk analysis based on user and transaction attributes, incorporates human feedback to refine outputs, and creates SAR drafts for final review.
- Optimized AI agent performance through evaluation and prompt engineering to align with risk investigators' needs. Improved the accuracy of identified suspicious transaction values by 2.5x when benchmarked against human-written reports.
- Deployed and maintained traditional ML and GenAI models for partner teams, ensuring scalable, cost-efficient production performance with continuous monitoring and optimization.

Software Engineer – PayPal   *San Jose, CA* | **Jul 2023 – Mar 2025**
- Spearheaded the development of 3 microservices for PayPal's rewards platform serving over 10 million users, achieving a 10x increase in rewarded transactions. Used Java, Spring Boot, Spring Batch, and Message Queue.
- Increased revenue by 30% through developing a feature to charge rewards commissions directly from merchants. Eliminated the cost of intermediary agencies for merchants.
- Led an initiative to improve the test framework. Reduced functional test execution time by 40%, increased test coverage for all components by 10%, and improved traceability of test case changes.
- Deployed the rewards platform's microservices to 600+ distributed instances, identified key performing metrics, and set up monitoring dashboards and threshold alerts.

Software Engineer Intern – PayPal   *San Jose, CA* | **May 2022 – Aug 2022**
- Reduced deployment latency by 50% through externalizing text content from JavaScript code using PayPal's localization service. Enabled instant live update for text content changes.
- Created an open-source npm module with 100+ downloads that generates consistent JSON payload for hashing.

Software Engineer Intern – Second State (open-source company)   *Beijing, China* | **Jun 2021 – Aug 2021**
- Created a tutorial on using Docker to containerize ML models with WebAssembly VM and deploying on AWS Lambda. Published as a GitHub repository and received 50+ stars.
- Developed code examples of serverless functions using Rust and deployed on WebAssembly-powered cloud platform.

EDUCATION

University of Pennsylvania – *Master of Computer and Information Technology*   **Aug 2021 – May 2023**
- GPA: 4.0 | Courses: Data Structures, Algorithms, Database Systems, Machine Learning, Distributed Systems

University of Oxford – *BA in Philosophy, Politics and Economics*   **Oct 2015 – Jun 2019**
- Overall Honours Classification: First Class – GPA equivalent: 4.0

PROJECTS

RAG App for Climbing Trip Planning | *Python, LangChain, Vector DB, Scrapy* | Link   Mar 2024 – Present
- Developed a retrieval augmented generation recommendation system for rock climbing trip planning. Used LangChain for prototyping and optimized performance with prompt engineering and fine-tuning.
- Created a web scraper with Scrapy and stored the data in a vector DB for retrieval.

ML Models for Image Classification | *Python, PyTorch, NumPy* | Link   Jan 2023 – May 2023
- Trained 3 models (logistic regression, CNN, ResNet50) to detect diseases types based on images of cassava leaves.
- Created a report with an analysis of hyperparameter tuning and validation metrics (F1 score and accuracy).

Distributed Cloud Platform | *C++, Unix* | Link   Sep 2022 – Dec 2022
- Created a distributed cloud platform that offers email and file storage services in a team of 4. The platform supports multiple frontend and backend servers, and features data replication, fault tolerance, and data recovery.

Face Analysis iOS App | *Swift, Core ML* | Link   Sep 2022
- Developed an iOS app that extracts faces in a photo and shows predicted age, gender, and emotion for each face. Integrated image recognition models with SwiftUI and Core ML.

Full-Stack Social Network App | *JavaScript, React, Node.js, MongoDB* | Link   Sep 2021 – Dec 2021
- Created Reddit-like web app in a team of 3 under the Scrum framework and deployed through Heroku.
- Independently implemented in-app synchronous chatting that supports image, audio, and video. Built the feature through polling, file streaming with Multer, and file storage with MongoDB GridFS.