Yufei Qiu

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Education

Purdue University — West Lafayette, IN
Master of Computer Science — *Dec. 2025*

Purdue University — West Lafayette, IN
Bachelor of Computer Science, Minor in Mathematics (GPA: 3.65) — *Dec. 2024*

Experience

Amazon Web Services (AWS) – Software Development Engineer Intern — Aug. 2025
Secrets Manager — *Seattle, WA*

- Shipped customer metrics using Amazon's internal **Coral** framework, including an idle usage metric across 50M+ secrets via **CloudWatch, DynamoDB, and SQS**, enabling up to $48M in potential annual cost savings.
- Built a fully integrated **TypeScript** dashboard in the Secrets Manager console; wrote unit tests via **Jest**, **React Testing Library**, ensuring accuracy and reliability for millions of users.
- Designed and implemented a backend metrics pipeline that collected data from **DynamoDB**, processed it via **SQS**, and emitted customer-facing metrics to **CloudWatch** Asynchronously for usage monitoring and cost optimization.
- Updated outdated documentation on Amazon's internal wiki, reducing new hire setup time by 60%; authored **Bash scripts** to automate legacy API testing through the local development stack.

Kohl's – Software Engineering Intern — June 2024 – Aug. 2024
Returns Team — *Remote*

- Deployed 5+ backend features to production via **RESTful APIs** on **OpenShift**, including support for original payment card returns, reducing in-store wait time by **30%**.
- Migrated legacy **SOAP** APIs to **REST** using **Spring Boot (Java)**, improving maintainability and reducing technical debt across multiple return workflows.
- Upgraded applications from **Spring Boot 2** to **3** by refactoring dependencies for compatibility and adding caching layers to cut redundant credential lookups, decreasing latency.
- Developed comprehensive unit and integration tests using **JUnit** and **Mockito** to simulate diverse customer return scenarios; performed backend load testing with **K6** to validate performance under peak conditions.

Purdue Data Mine - Undergrad Researcher — Aug. 2023 – May 2024
Purdue University (Corporate Partner: No Limit Living LLC) — *West Lafayette, IN*

- Led backend team across 16 Agile sprints, designing and optimizing **MongoDB** databases and queries.
- Enhanced user authentication security and built forum functionality using the **MERN stack**.
- Collaborated directly with CEO and product stakeholders to align engineering deliverables with business objectives.

Projects

Auto Slides — Fall. 2025
Flask Backend | LLM Integration | Firebase Auth | AWS S3

- Built a Python Flask backend converting PDFs to PowerPoint via Gemini LLM, PyMuPDF, and `python-pptx`.
- Integrated Firebase Auth and AWS S3 for secure per-user storage with pre-signed downloads for easy access.

Music Genre Classification with LLMs — Spring 2025
BERT + LSTM/GRU with GloVe embeddings

- Built a multi-class genre classifier for 10K+ lyrics using **PyTorch, HuggingFace, and GloVe embeddings**.
- Fine-tuned and benchmarked models on accuracy, achieving **73%** with error analysis for model robustness.

Networking Router with DHCP and NAT — Spring 2025
C-based System Project | Virtual Environment

- Created a **NAT router** and **DHCP server** in **C**, enabling IP forwarding and dynamic assignment across networks.
- Managed dynamic **NAT tables** for ICMP, TCP, and UDP traffic with timeout handling.

Technical Skills

Programming Languages: Java, Python, C/C++, SQL, MongoDB, JavaScript, TypeScript, Bash, Scala, R
Frameworks & Tools: Spring Boot, React, Node.js, Docker, Kubernetes, AWS (Secrets Manager, CloudWatch, DynamoDB, Lambda, S3, SQS, EC2, IAM, CDK, CloudFormation), MongoDB, PostgreSQL, Git, Postman, Confluence, Jira
Libraries & Data: PyTorch, HuggingFace, Dataset, Pandas, Word2Vec, NumPy, Matplotlib
Methodologies: Agile/Scrum, CI/CD, Test-Driven Development (TDD), Pair Programming