

Qianyi Xue

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EDUCATION

DUKE UNIVERSITY

Master of Science in Electrical & Computer Engineering (Major: Software Development)

Expected 08/2023 - 12/2024

SICHUAN UNIVERSITY

Bachelor of Engineering in Computer Science

09/2019 - 06/2023

SKILLS

- **Languages:** Python (advanced), Java (advanced), JavaScript(intermediate), SQL (intermediate), C++, C, dart, Shell.
- **Frameworks:** Spring MVC, NodeJS, React, Node.js, Flutter, MongoDB, MyBatis, PyTorch & Hugging Face (AI Framework).
- **Developer Tools:** Linux, Git, Relational Databases, MySQL, Redis, AWS services.
- **Software Applications:** Anaconda, SPSS, Matlab, Arduino.

WORK EXPERIENCES

Amazon Software Dev Engineering Intern

Intern at AWS Systems Manager

Seattle, United States

05/2024 - 08/2024

- Participated in the development of **project Simba**, enabling **Just-In-Time access to SSM managed instances** by designing and implementing both manual and automated approval workflows, enhancing security and operational efficiency.
- Developed the “**Cedar policy generator**” chatbot from scratch, automating Cedar Policies code generation and integrating **AWS Lambda, S3, DynamoDB, CloudFormation, LangChain AWS, Bedrock (Claude 3.5 Sonnet), and APIGW**, streamlining policy creation and reducing manual effort by 80%.
- Implemented full-stack Cedar Generator with a strict validation mechanism to ensure generate legal Cedar Code, leveraging **React** and **Polaris UI** for the frontend and **Java/Python** for the backend, and constructed robust **CDK pipelines** with **unit** and **integration testing**, achieving **99.99% uptime**.
- Facilitated the team's onboarding to the newly published internal tool, **Tangerine Box telemetry** for frontend CDK to quickly emit metrics and alarms to dashboards, monitoring the frontend performance from latency, proxy error, and custom metrics.

West China Biomedical Big Data Center Research Intern

Optimize the mRNA vaccine sequence algorithm for the covid-19

Chengdu, China

04/2022-02/2023

- Developed a **machine translation (MT) model** between the UTR and ORF of the RNA sequence and enhanced the **BLEU-4 score** from **9.46** to **30.21** to optimize the RNA sequence.
- Redesigned the pre-training task of **DNABERT** to enable **RNABERT** to hold up to **2551** tokens compared to the original **512** tokens of BERT. Pre-trained RNABERT with a total of **152,000** collected UTRs and ORFs data.
- Constructed a novel RNABERT2RNABERT model using **BERT2BERT** and pre-trained RNABERT, which introduces pre-trained gene sequence models to the translation task of gene languages for **the first time**.
- Applied MT model to optimize mRNA sequence which confirmed to produce of **highly expressed proteins** and be applicable in vaccine development.

Yillion Bank Data Analyst Intern

Intelligent Risk Control Department

Beijing, China

12/2021 - 02/2022

- Used **xlwings** package in **Python** to process weekly, daily and annual data in Excel data (VBA), and **built an automated data process workflow** that greatly **reduced time costs**. Saved time manual filling time and is highly praised by the team leader.
- Built complex **SQL** to extract data from the data lake and completed **up to 300 lines** of SQL statements in a single query.
- Performed **binning method** to extract data and conducted customer portrait analysis.

PROJECTS

Full Stack MERN IOS/Android App

06/2023 - 07/2023

- Developed a full-stack Inventory Management App with the MERN stack from scratch, with **React** and **SCSS** on the frontend and **NodeJS, Express and MongoDB** on the backend and **Axios** to connect the front-end and back-end.
- Implemented user authentication (**JWT**), **RESTful APIs (CRUD)**, and **Redux Toolkit** for state management.
- Deployed the app to **Heroku** and **Render** for accessibility.

Fight Depression Applet

09/2021 - 12/2021

- Designed a WeChat Applet that provided users with a comprehensive platform for auxiliary diagnosis of depression.
- Built the backend of an applet by the **SpringMVC+JPA+redis mode**, implemented fuzzy matching in search by **Elastic Search engine** and used **phpStudy** to manage the database by **MySQL**.
- Applied **Redis cache** to regularly record user pageviews to reduce database visiting traffic and service latency.

Disaster-Prevention-Treasure IOS/Android App

09/2020 - 02/2021

- Designed an App to assist users understand disaster prevention measures and enable reporting and access to disaster locations.
- Achieved mobile terminal development based on **flutter-UI** framework and **dart** language.
- Implemented the **Provider** package for state management within the app.