

Mengyu Zhang

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EDUCATION

- Johns Hopkins University**, Master of Science, Data Science May. 2023
- University of California, Los Angeles**, Bachelor of Science, Applied Mathematics Major, Statistics Minor Dec. 2020
- Honors: Dean's Honor List, Tau Sigma Honor Society

PROFESSIONAL EXPERIENCE

- Full Stack Developer** Washington, U.S.
- Self-Employed** Jul. 2023 – Current

- Utilized **React** alongside **React Router** and **Material-UI** to construct a responsive, component-based SPA (Single Page Application), enhanced with dynamic rendering and client-side state management, ensuring optimal user interactions.
- Integrated **Redux** with **Redux Saga** to handle asynchronous operations, using **Express.js**, **MongoDB Atlas**, and **Mongoose ODM** in a microservices architecture, ensuring scalability and streamlined data interactions.
- Leverage **Passport.js** with OAuth strategies, using **bcrypt** for salted password hashing and **JSON Web Tokens (JWT)** with **HTTP Only Cookies** to establish a fortified authentication mechanism, optimizing security and ensuring GDPR compliance.
- Embedded **Socket.io** with a **Redis** message broker, orchestrating real-time bi-directional communication, fortified with **Nginx** for reverse proxy setups, ensuring uninterrupted communication even under high traffic.
- Employed **Elasticsearch** indexing, expertly synergized with advanced **Aggregation Pipelines** and optimized **Redis caching**, to offer users precise, low-latency search results meticulously fine-tuned to their individual profile.
- Deployed entire infrastructure on **Amazon Web Services**, utilizing with **EC2**, **RDS**, **S3**, and **CloudFront** for computing, database management, storage and content delivery, to ensure high availability, redundancy, and global reach.

- Data Science Intern** California, U.S.
- Sikka Software Corporation** May. 2022 – Aug. 2022

- Built **ETL Pipelines** with **PySpark** and **Boto3** to update and maintenance over 1 billion patients' data stored on **AWS S3**.
- Connected **AWS Athena** with **PyAthena** and **SQLAlchemy** to perform data management and preview on collected data.
- Constructed **BiLSTM** model with **PyTorch** on **AWS EC2** to predict health indicators for evaluating patients' dental health.
- Detected medical entities from medical notes data with **AWS Comprehend Medical** to perform **EDA** that identified insights on time sequential procedure records, demonstrating feasibility in predicting progressive diseases' procedures.
- Performed word embedding for sequential text using **BioBERT** and **Clinical BERT** constructed by **TensorFlow Keras**.

- Software Development Engineer Intern - Machine Learning** Beijing, China
- Inspur Group Company** Jun. 2021 – Jul. 2021

- Built **Selenium WebDriver** on **Python** to enable web crawler for collecting and updating over 1 million images data.
- Designed image editing filters with **OpenCV** to change brightness, contrast and add data augmentation to images.
- Developed and deployed **YOLOv4** object detection model with **CUDA** onto **HUAWEI Bastion Host Cloud Computing Server**, generate prediction on receipt pictures' recognition which led to **95% +** accuracy.
- Built **OCR** invoice recognition product with **Pytesseract**, achieved 77.4% OCR accuracy, improved over 30% baseline.

PROJECT EXPERIENCE

- Campus Second-Hand Platform for Students** | Spring Boot, MyBatis, Redis, React Mar. 2023 – Jul. 2023
- Developed distributed e-commerce system based on **Spring Boot** and **Spring Cloud** backend Microservice architecture.
 - Created login functionality with **React** using **Firebase**, allowed **Google Authentication** and email sign-in methods.
 - Integrated the application with **Redis** as distributed cache for optimizing system performance, **Elasticsearch** for faster product retrieval time, **Spring Session** for session data sharing, **thread pool** and asynchronous task for stability.
 - Implemented registration/configuration center with **Nacos**, **Gateway** as gateway, and **Feign** for remote calls.
 - Initialized **CI/CD Pipelines** on **Circles** and designed unit test/integration test processes with **Junit5**, **Mockito**, **Jest**.

SKILLS

Programming Languages: Python, Java, JavaScript, HTML/CSS, C++, R, SQL, Tableau, MATLAB, Shell scripting

Frameworks: Spring, SpringMVC, Spring Boot, MyBatis, Hadoop, Apache Spark, HDFS, Django, Flask, React, Vue, Redux, Node.js, Vue.js, AWS Redshift, Amazon S3, Bootstrap, TensorFlow, PyTorch, scikit-learn, Keras, NLTK

Tools: MySQL, SQLite, PostgreSQL, CUDA, Git, Docker, Bash, Linux, Conda, Heroku, Nginx, Restful, Maven, Jenkins, Postman

Core Competency: OOP, Web Application, Backend Development, Microservice, Algorithms, Database Management