Jasper Liu

Jasper25neu@gmail.com | 323-675-0007 | LinkedIn | GitHub

Education

Northeastern University   Seattle, WA
Master of Science in Computer Science, GPA: 3.96/4.0   *Sep 2022 - Dec 2024*
- Teaching Assistant: Data Structures, Algorithms and Computer Systems(C++) (23 Summer, 23 Fall, 24 Spring)
- Teaching Assistant: Cloud Computing (AWS Academy Graduate - AWS Academy Cloud Architecting) (25 Spring)

Experience

Independent Developer   Feb 2025 - Now
My16 AI Chat App | React Native, TypeScript, Firebase, Serverless, OpenAI API, FAISS, Transformer   *Seattle, WA*
- Independently developed AI chat app for iOS and Android with personalized assistants based on personality types
- Built cross-platform mobile application using React Native, implementing smooth UI and complex state management
- Created serverless backend using Firebase Cloud Functions and TypeScript with OpenAI API integration
- Integrated Retrieval-Augmented Generation (RAG) leveraging vector databases for efficient knowledge retrieval, enhanced by machine learning with Transformer-based embedding models to improve retrieval quality

Software Engineering Co-op   Jun 2024 - Dec 2024
Method AI | C++, Python, Git, Docker, Nginx, Github Actions, CMake, AWS, Linux, SQLAlchemy, CI/CD   *Boston, MA*
- Developed a DICOM image pipeline using C++ and Igtlink communication to display ultrasound scanning images on our terminal, and provided a backtesting tool to assist colleagues in algorithm development
- Added practical features to an image capture upload/download tool using Python, SQLAlchemy, and AWS boto3 with AWS S3, streamlining colleagues' workflows and saving significant time
- Integrated apt package generation functionality into the CI/CD pipeline using GitHub Actions and CMake, enabling automated creation of versioned Ubuntu apt packages for streamlined software distribution and simplified installation

Software Engineer Intern   Dec 2023 - May 2024
1 Thing Org | React Native, TypeScript, Firebase, RESTful API   *Remote*
- Built cross-platform social app for Asian community using React Native with Firebase integration
- Integrated RESTful APIs in the React Native app, enhancing user connectivity and content sharing

Data Architect   Aug 2021 - Dec 2021
SKF Group | Python, Kafka, Spark, PostgreSQL, Scripts, Power BI   *Shanghai, China*
- Developed real-time pipelines with Spark and Kafka, supporting timely data streaming and analytics
- Optimized data workflows and automated KPI dashboards with Python, shell scripts, PostgreSQL, and Power BI, boosting efficiency by 95%

Software Engineer   Aug 2020 - Jul 2021
Robert Bosch GmbH | Python, Pandas, Numpy, SQL   *Shanghai, China*
- Optimized ETL processes, enhancing data processing efficiency and accuracy
- Developed a planning alert BI system with python, script and SQL, reducing processing time and improving supply chain responsiveness

Projects

Titanic Survival Prediction | *Python, Scikit-learn, Machine Learning, Matplotlib*   Sep 2024 - Oct 2024
- Achieved top 15% ranking with 80% prediction accuracy through ensemble learning and feature importance analysis
- Applied domain-specific data preprocessing techniques to handle missing values based on passenger demographics
- Implemented HistGradientBoostingClassifier with RandomizedSearchCV for hyperparameter optimization
- Performed advanced feature engineering including title extraction, cabin categorization, and fare binning
- Utilized ordinal encoding for categorical features and implemented cross-validation to prevent overfitting

SkiRideHub Distributed Platform | *Java, Servlet, Redis, RabbitMQ, AWS EC2, Tomcat, Docker*   Aug 2023 - Sep 2023
- Developed a scalable Java client with multithreading, queuing, and atomic variables, achieving 8k request handling
- Utilized Docker technology to containerize services, leveraging Docker images to simplify and accelerate deployment
- Built server API using Java servlet, validating URLs and JSON payloads, and queuing with RabbitMQ
- Implemented load balancing with AWS ELB, enhancing system performance and scalability
- Implemented Redis with RDB persistence and CQRS architecture to ensure high-speed data storage and security

Technical Skills

Languages: Java, Python, C++, C#, TypeScript, SQL, Go, JavaScript, Scala
Frameworks & Libraries: React, Spring Boot, Apache Spark, SQLAlchemy, RESTful API, Apollo GraphQL, JDBC
Databases & Messaging: MongoDB Atlas, PostgreSQL, MySQL, Redis, Kafka, RabbitMQ
Cloud & DevOps: Docker, Linux, Kubernetes, AWS CDK, GCP, Azure, AWS, CMake, GitHub Actions, SonarCloud, Tomcat, Git
Machine Learning & AI: PyTorch, TensorFlow, sklearn, FAISS, Hugging Face Transformers, OpenAI API
Selected Courses: Distributed Systems, Cloud Computing, Operating Systems, Algorithms, Databases, Machine Learning