Sihui (Sharon) Lyu

San Jose, CA (open to relocate) | 216-703-0651 | lyu.sihui96@gmail.com | https://www.sihuilyu.com

EDUCATION

Northeastern University - Silicon Valley, *M.S. in Computer Science*, GPA: 4.0/4.0   **08/2024 - Present**

Case Western Reserve University, *M.S. in Management*, GPA: 3.60/4.0   **08/2019 - 01/2021**

Wuhan University of Technology, *B.S. in Logistics Engineering*, GPA: 3.54/4.0   **09/2015 - 06/2019**

SKILLS

Programming Languages: Java, Python, SQL, JavaScript/TypeScript, HTML/CSS, C/C++, Bash/Shell scripting

Tools and Technologies: ReactJS, Git, Docker, Kafka, AWS (EC2, Lambda, RDS, DynamoDB)

PROJECTS

Balloon Flight Prediction (*https://www.sihuilyu.com/projects/balloon*)   **03/2025 - 05/2025**

- Built and deployed a Flask-based web application to predict balloon trajectories in real time, integrating ML inference and geospatial risk visualization to display color-coded alerts.
- Implemented a Python-based data pipeline to ingest and clean real-time telemetry (Windborne) and weather data via public APIs (OpenSky, OpenWeather), scheduled via APScheduler for hourly updates.
- Trained and validated a Random Forest Regressor on historical flight and wind data to forecast balloon speed and direction, achieving 98% validation accuracy.
- Developed a KD-Tree-based risk detection engine to identify potential airspace conflicts (e.g., FAA no-fly zones, military bases), enabling automated safety alerts.

Blackjack-ACE (*https://www.sihuilyu.com/projects/blackjack*)   **01/2025 - 03/2025**

- Built a modular Java Blackjack game with MVC architecture and real-time AI suggestions powered by Q-learning.
- Applied OOP principles to design reusable backend components (e.g., Card, Player, Dealer) for feature scalability.
- Implemented decoupled controllers to manage user input and game state across multiple gameplay modes.
- Achieved 100% JUnit test coverage across all model and controller logic to guarantee correctness and maintainability.

Home Sweet Home   **09/2024 - 12/2024**

- Built a full-stack platform to display rental and for-sale homes across the U.S., with live search and filtering.
- Developed the frontend using React, Next.js, and Tailwind CSS; stored backend data in AWS RDS for persistence.
- Created automated data pipelines to fetch property details via RapidAPI using AWS Lambda, triggered by CloudWatch for scheduled runs, ensuring consistent and up-to-date property listings.
- Designed responsive UI components with Chakra-UI, optimizing for both desktop and mobile experiences.
- Enhanced the app with advanced search features, including filters (e.g., room count, price range, and area), and implemented server-side rendering to optimize performance and user experience.

EXPERIENCE

Bettaway Supply Chain Service, South Plainfield, NJ   **09/2021 - 05/2024**

Logistics Data Analyst

- Designed and implemented scalable Python-based ETL pipelines to automate trailer usage and expense reporting, reducing manual workload by 90% and enhancing analytics accuracy for fleet management.
- Engineered data ingestion workflows from a SQL-based transportation management system using pyodbc, ensuring real-time data consistency across location, cargo, and order datasets to support logistics monitoring.
- Developed data transformation logic to merge and integrate multi-source data (5+ relational tables) using Pandas, NumPy and SQL for downstream payment and analytics workflows, supporting financial reconciliation.
- Led the migration of analytics infrastructure from QlikView (on-premises) to QlikSense (cloud-based), refactoring scripts and visual components to ensure reliability, compatibility, and performance at scale.