

# Yushan Lu

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## Education

- University of Wisconsin-Madison, M.S. in Computer Science, GPA: 3.9/409/2023 – 12/2024
- Relevant Coursework: Big Data Systems, Data Science Programming, Database Management Systems, Data Cleaning & Integration, Operating Systems, Computer Networks, Software Engineering
- National Tsing Hua University, B.S. in EconomicsHsinchu, Taiwan | 09/2013 – 05/2017

## Skills

- Certification:** AWS Certified Solutions Architect - Associate, AWS Certified Cloud Practitioner
- Programming Languages:** C/C++, Java, Python, and JavaScript
- Web Development:** HTML/CSS, TypeScript, Express.js, FastAPI, Rest API, GRPC, React.js, and Node.js
- Data Engineering/Analytic:** Cassandra, Spark, HDFS, Kafka, Pandas, PyTorch, SQL, MongoDB ,and BigQuery
- DevOps:** Google Cloud Platform, Docker, and Git

## Work Experience

- Budgetwise, Backend Developer Intern, CA06/2024 – 09/2024
- Developed backend solutions for AI-powered iOS, Android, and web applications to manage personal finance using **Express, Node.js, REST API, and Firebase**
  - Integrated Plaid and Stripe APIs to securely connect to users’ bank accounts and process financial transactions
  - Led the refactoring of the existing codebase and authored clear, comprehensive documentation using **Postman** to streamline API testing and integration.
- ADLINK Technology Industrial Engineering, Senior Engineer, Taipei, Taiwan09/2021 – 08/2022
- Utilized **Agile methodology** to analyze manufacturing processes, identify bottlenecks, and design a streamlined workflow using **Kanban**, leading to actionable automation steps
  - Analyzed working hour data and discovered patterns of labors’ inefficient behaviors; recommended COO solutions, which **lowered manpower by 7%** in the first two months after implementation

## Selective Projects

- OnlyMemes - Full-Stack Video Processing Service - TypeScript / React.js / GCP / Firebase01/2024
- Built a scalable video transcoding service from the ground up, using **ffmpeg** for processing, **Pub/Sub** for messaging and buffering, and **Cloud Run** for separate deployment of frontend and backend
  - Leveraged **Cloud Storage** to manage raw and processed videos, implementing access control through **Signed URLs** from **Firebase Functions** for authenticated users
- Othello AI - Board Game Application - Python / MySQL / FastAPI / Pytest / Git / Docker12/2023
- Led a team in developing a web application for board game “Othello”, engineering key features including **player-vs-player** functions and **step-optimization** suggestions
  - Enhanced AI strategy with Alpha-beta pruning and Monte Carlo tree search algorithms; implemented a user-friendly game interface using **React JS**
- Cassandra-Based Weather Data Platform - Python / Spark / Cassandra / GRPC11/2023
- Architected a **Cassandra-based** data storage solution for NOAA’s global weather data, focusing on **schema optimization** with partition and cluster keys to efficiently manage and access large datasets
  - Developed a data collection server integrated with **Apache Spark** for in-depth data analysis, enabling seamless data flow and processing between Cassandra and Spark for actionable weather insights
  - Optimized Cassandra configurations for high write availability, employing strategic read/write tradeoffs to maintain system integrity and performance