

YuJia Liang

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EDUCATION

National Taiwan Ocean University

Keelung, Taiwan

B.S. in Computer Science and Engineering - GPA: 3.6/4.0

Sep. 2022 – Present (EST. May 2026)

Relevant Courses: Data Structures, Algorithms, Graph Theory Algorithms, Operating Systems, Computer Networks, Computer Organization, Digital Logic, Database Systems, Introduction to AI, Machine Learning, Generative AI, Information Security, Programming Design, iOS Development, Flutter Development, Linear Algebra, Discrete Mathematics, Probability Theory, Object-Oriented Programming

RESEARCH & PROJECTS

Volleyball Line Judging System

Nov. 2024 – present

OpenCV, Python, PyTorch — Advisor: Prof. Pei-Yi, Ding

Team size: 3

- Designed and developed an automated line-judging system to make accurate in/out calls in volleyball.
- Engineered a computer vision pipeline using OpenCV to capture and process real-time court imagery, identifying ball position relative to court boundaries to enhance officiating accuracy.

Archon RWA Tokenization DApp

2025

React, TypeScript, Solidity, Hardhat, Ethers.js, Tailwind CSS

Team size: 1

- Developed a comprehensive DeFi platform for Real-World Asset (RWA) tokenization featuring role-based access control (ADMIN, VERIFIER, MINTER).
- Implemented secure smart contracts for identity verification, asset lifecycle management, and dynamic ERC20 token creation, with automated deployment scripts.
- Built a modern, responsive frontend using React and TypeScript, integrating real-time wallet connectivity with MetaMask and dynamic account switching.

Image Processing Project

2025

Python, OpenCV, NumPy, scikit-image

Team size: 1

- Implemented a complete Image Signal Processing (ISP) pipeline and developed robust 3A algorithms (Auto Exposure, Auto Focus, Auto White Balance).
- Engineered a suite of computer vision features, including edge detection, feature detection, image enhancement, noise reduction, and image segmentation.

ASL Hand Gesture Recognition App

2024

SwiftUI, CreateML

Team size: 1

- Trained and deployed a custom machine learning model using CreateML to classify 28 distinct American Sign Language hand gestures (A-Z, Space, Delete) with high accuracy.
- Integrated a real-time camera feed into a native SwiftUI iOS application, allowing users to construct sentences from recognized gestures.
- Designed a clean, accessible, and user-friendly interface focused on improving communication for users.
- WWDC2025 Submission

SyncUp - Social Calendar App

2025

Flutter, Dart, Firebase, Google API, LLM API, RAG

Team size: 1

- Developed a modern social calendar app with real-time sharing and friend management using Flutter and Firebase.
- Implemented location-based event suggestions and interactivity with Google Maps integration.
- Integrated Firebase Authentication, Cloud Firestore, and real-time chat features with read receipts.
- Built an AI-powered chatbot API connected with Google Gemini to intelligently generate schedules and suggest meetup opportunities based on user preferences and availability.
- Implemented RAG system to provide contextual calendar recommendations and smart event planning assistance.

EXPERIENCE

ITRI

Jun. 2025 – Aug. 2025

AI Image Recognition Intern, Electronics and Optoelectronics Research Laboratories

Hsinchu, Taiwan

- Optimized a multi-task YOLO model for autonomous driving applications, achieving high-performance metrics including 99% driving area accuracy, a 97% detection recall rate (R), and a mean Average Precision (mAP@0.5) of 84%.
- Implemented image streaming and detection result transmission protocols via Ethernet to enable real-time data processing and analysis.
- Optimized YOLO object detection models for performance and efficiency using advanced pruning techniques and successfully transplanted models to target hardware.
- Supported research initiatives by reproducing and exploring other state-of-the-art (SOTA) models to benchmark and identify potential improvements.

TECHNICAL SKILLS

Programming Languages: Python, Java, C++, C, JavaScript, TypeScript, Swift, Dart, PHP, Solidity, SQL, HTML/CSS, MATLAB

Frameworks & Libraries: React, Node.js, Flutter, SwiftUI, PyTorch, OpenCV, NumPy, Pandas, Ethers.js, Hardhat

Tools & Platforms: Git, Docker, Firebase, Google Cloud Platform (GCP), Jupyter Notebook, Linux/Windows/MacOS, MongoDB

Languages: English (Fluent), Mandarin (Native), Japanese (JLPT N3)

EXTRACURRICULAR ACTIVITIES

National Taiwan Ocean University Tennis Team Member

2022 - 2023

Keelung, Taiwan

Volleyball Department Team Captain

2022 - present

Keelung, Taiwan

Hackathon Participant

2022 - present