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 – May 2026 (Expected)*
Relevant Courses: Data Structures & Algorithms, Graph Theory Algorithms, Operating Systems, Database Systems, Computer Networks, Machine Learning, Natural Language Processing, Generative AI, Object-Oriented Programming, Cyber Security, Linear Algebra, Discrete Mathematics, Probability Theory

EXPERIENCE

ITRI — Jun. 2025 – Aug. 2025
AI Image Recognition Intern, Electronics and Optoelectronics Research Laboratories — *Hsinchu, Taiwan*
- Optimized multi-task YOLO model for autonomous driving, improving inference speed by 40% while maintaining 99% driving area accuracy, 97% detection recall, and 84% mAP@0.5
- Implemented real-time image streaming and detection via ROS/Ethernet, processing 30 FPS with sub-50ms latency
- Applied neural network pruning techniques, reducing model size by 35% for edge deployment while preserving accuracy

RESEARCH & PROJECTS

Volleyball Performance Analysis System − Published Research — Nov. 2024 – Sep. 2025
Python, OpenCV, PyTorch, YOLO — Advisor: Prof. Pei-Yi, Ding — *Co-author (60% contribution)*
- Co-authored research paper on volleyball analytics achieving 94.49% mAP@0.5 for action detection and 79.5% ball tracking accuracy
- Implemented VballNet (U-Net) for real-time ball tracking at 200 FPS with automated landing detection and court boundary analysis
- Trained YOLOv11m on 24,806-image dataset to detect 5 volleyball actions, achieving 37.1% improvement over YOLOv8

Ghote − AI-Powered Learning Assistant Platform — Sep. 2025 – Present
Flutter, FastAPI, PostgreSQL, Firebase, Google Gemini API, Celery, Redis, RAG — *Team Lead (5 members)*
- Led 5-person team building AI study platform that auto-generates notes, quizzes, and flashcards, reducing study material creation time by 90%
- Architected full-stack solution with Flutter frontend, FastAPI backend, and async document parsing pipeline using Celery workers, designed to handle 1,000+ documents/day
- Integrated Google Gemini API with RAG system for context-aware content generation, optimizing prompts to maintain free tier limits while ensuring high-quality output
- Implemented Firebase Authentication, PostgreSQL database, Cloudflare R2 storage, and deployed on Render with CI/CD via GitHub Actions

Archon RWA Tokenization DApp — Jun. 2025
React, TypeScript, Solidity, Hardhat, Ethers.js, Tailwind CSS — *Individual Project*
- Developed DeFi platform for Real-World Asset tokenization with role-based access control (ADMIN, VERIFIER, MINTER)
- Implemented smart contracts for identity verification, asset lifecycle management, and dynamic ERC20 token creation
- Built responsive frontend using React and TypeScript, integrating wallet connectivity with MetaMask and account switching

TECHNICAL SKILLS

Programming Languages: Python, Java, C++, JavaScript/TypeScript, Swift, Dart, SQL
ML/AI: PyTorch, TensorFlow, OpenCV, scikit-learn, NumPy, Pandas, CreateML
Frameworks: React, Flutter, FastAPI, Node.js, SwiftUI, Celery
Tools: Git, Docker, Firebase, AWS, GCP, PostgreSQL, Redis, Linux, Windows, macOS, ROS
Languages: Mandarin (Native), English (Fluent TOEFL 110), Japanese (JLPT N3)

LEADERSHIP & ACTIVITIES

Volleyball Team Captain (2022–present) | **NTUFC Kronos Reading Club** (Sep.–Dec. 2025)
Hackathons (2022–present)