Yu-Han Lee (Tyler)

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EDUCATION

King's College London
MSc Advanced Computing
London, United Kingdom
Sep 2024 – Sep 2025

- **Thesis:** *"Towards Automated Basketball Video Analysis through Modular Deep Learning Architectures: Detection, Recognition, and Tactical Insight".*

Chung Yuan Christian University
BSc Information and Computer Engineering
Taoyuan, Taiwan
Sep 2020 – Jan 2024

- **GPA:** 3.93/4.0 (Dean's List, Ranked 2nd/56 (Top 3%) in Spring 2020).
- **Overall:** 88.79%

SKILLS

Coding Languages	Python, Java, C++, TypeScript/JavaScript, HTML/CSS
ML & CV	PyTorch, TensorFlow/Keras, YOLOv8, ByteTrack/Deep SORT, R(2+1)D, CLIP, VGGFace, MediaPipe, OpenCV
Generative AI / RAG	Cloudflare Workers AI, Durable Objects, Vectorize, FAISS, llama.cpp
Data & Analytics	PySpark, pandas/NumPy, Matplotlib/Seaborn, XGBoost, LightGBM, SHAP
MLOps & Platforms	MLflow, Prefect, Great Expectations, Docker, Streamlit, Cloud Run, SLURM (CREATE HPC), Linux, CI/CD (GitHub Actions)
Backend & APIs	FastAPI, Cloudflare Workers, REST API design, SQLAlchemy, SQLite
Additional	Web scraping (Selenium), Problem-solving, System Design, Code Reviews, Agile, Unit Testing
Languages	English (Fluent), Mandarin (Native)

WORK EXPERIENCE

Chung Yuan Christian University
Undergraduate Research Assistant (NSTC Funded)
Taoyuan, Taiwan
Jul 2023 – Feb 2024

- Conducted research on one-shot learning for face recognition in classroom roll call systems, utilizing data augmentation, transfer learning, and triplet networks to improve accuracy by 5% to 20%.
- Developed deep learning pipelines with Python and TensorFlow, incorporating ensemble learning methods such as simCLR and Triplet Networks to improve model stability and accuracy.
- Awarded **NSTC Undergraduate Research Grant** (one of the less than 5% accepted projects nationwide).
- Co-authored **TAAI 2023** paper presenting the system and experimental results.

Chang Ching Yu Memorial Library, Chung Yuan Christian University
Library IT Intern
Taoyuan, Taiwan
Feb 2022 – Feb 2024

- Enhanced a Python-based thesis checker using Selenium and pdfplumber, significantly reducing manual review time and improving the accuracy of document validation.
- Automated BibTeX-to-CSV workflow scripts to streamline citation data processing and improve reliability of academic database management.
- Provided technical support to students and staff, troubleshooting system issues and setting up software for approximately 500 users, resulting in improved technology access and user satisfaction.

Taiwan Mobile Co., Ltd.
Software Engineer Intern
Taipei, Taiwan
Jul 2023 – Aug 2023

- Developed a Java-based image conversion tool to batch process and standardize image formats, reducing manual preprocessing efforts for the design team.
- Implemented prototypes that enabled mobile camera access and multimedia capture using HTML5, W3C MediaStream API, Vue.js, and jQuery, facilitating 15% more efficient user engagement and media processing.
- Experimented with YOLOv8 for logo detection to identify outdated images across web resources, contributing to dataset preparation and validation.

Projects

FusionGuard Analytics – Fraud & Churn Platform   Oct 2025

– Engineered a PySpark feature store with Great Expectations checks to unify Kaggle fraud and churn datasets for reproducible MLflow experiments.

– Trained XGBoost and autoencoder fraud models (AUCPR 0.88, recall 0.86) plus a LightGBM churn model (AUROC 0.84), packaging SHAP insights into model cards.

– Automated Prefect + MLflow retraining workflows, Docker/Cloud Run deployment helpers, and a llama.cpp-backed FastAPI assistant with Streamlit drift monitoring.

Payment Transaction Simulator   Oct 2025

– Shipped a card-network payment authorization simulator with FastAPI, SQLite, and Docker, owning analysis, design, testing, and deployment.

– Delivered RESTful APIs for payments, transaction lookups, stats, and reset, backed by fraud heuristics and rigorous validation.

– Produced an interactive demo (Swagger + custom frontend) showcasing transaction flow and operational observability.

MSc Thesis Project – Automated Basketball Video Analysis   Feb 2025 – Jul 2025

– Designed a modular CV pipeline integrating YOLOv8 (detection), ByteTrack (tracking), R(2+1)D (action recognition), CLIP (team classification), and homography (tactical visualization).

– Deployed and executed training pipelines on an HPC cluster with PyTorch and Linux, achieving YOLOv8 mAP 0.97 and R(2+1)D 86% accuracy.

– Generated tactical insights including player trajectories, speed profiles, and team strategies.

BSc Graduation Project – One-shot Learning for Classroom Roll Call   Sep 2022 – Sep 2023

– Researched one-shot learning using deep learning to address face recognition challenges in a student roll call system.

– Combined data augmentation, transfer learning, and Triplet Networks to train a model with one photo per student, achieving accurate face recognition.

– Proposed and verified a research plan for a fellowship from the **NSTC Undergraduate Research Grant** (one of <5% accepted projects nationwide).

– Contributed to the development and evaluation of the model presented at **TAAI 2023**.

Our-Scheme (Programming Language Project)   Feb 2023 – Jul 2023

– Built a custom C++ interpreter for processing and evaluating expressions based on formal language specifications.

– Engineered lexical analysis and syntax parsing modules to tokenize and interpret user input.

5-stage Pipelined CPU (Computer Organization Project)   Feb 2022 – Jul 2022

– Designed and implemented a 5-stage pipelined MIPS-Lite CPU using Verilog HDL and ModelSim.

– Supported arithmetic, logic, memory, and branching operations; validated through waveform simulations.

SIC/SICXE Assembler (System Programming Project)   Aug 2021 – Jan 2022

– Developed a two-pass assembler in C++ for SIC and SIC/XE machine languages.

– Translated source code into object code with syntax validation and instruction set support.

Publications

Lin, W.-J., **Y.-H. Lee**, W.-H. Hsu, and C.-C. Yu (2023). "One-shot Learning for Classroom Roll Call System using Triplet Network and Transfer Learning". In: *Proceedings of the 28th Conference on Technologies and Applications of Artificial Intelligence (TAAI 2023)*. Domestic Track, Dec. 1–2, 2023, National Yunlin University of Science and Technology, Yunlin, Taiwan.

Certifications

– **Oracle Cloud Infrastructure 2025 Certified Data Science Professional (1Z0-1110-25), Oracle**   Oct 2025
Certification ID: 322555922OCI25DSOCP

– **Oracle Cloud Infrastructure 2025 Certified Generative AI Professional (1Z0-1127-25), Oracle**   Sep 2025
  Certification ID: 322555922OCI25GAIOCP

– **Oracle AI Vector Search Certified Professional (1Z0-184-25), Oracle**   Sep 2025
  Certification ID: 322555922DB23AIOCP

– **Oracle Cloud Infrastructure 2025 Certified AI Foundations Associate, Oracle**   Sep 2025
  Certification ID: 322555922OCI25AICFA

– **Getting Started with AI on Jetson Nano, NVIDIA**   Sep 2025
  Certification ID: QOo9QdpmT82Kosp2W5YB