Cheng-Yi Tang

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EDUCATION

University of California, Irvine — **Irvine, CA**
***Master of Software Engineering**, GPA: 3.88/4.00* — Sept. 2024 - Dec. 2025 (Expected)
- Courses: Distributed Software Architecture, Cloud and Security Dependability, Software Testing and Debugging

National Chengchi University — **Taipei, Taiwan**
***Bachelor of Science in Management Information Systems,** GPA: 3.61/4.30* — Sept. 2019 - June 2023
- Research Assistant: Human-Automation Interaction Lab (Publications)
- Courses: Database Systems, Computer Network, Applied Machine Learning, Data Structures, Algorithms

EXPERIENCE

Raydium Semiconductor Corporation — **Hsinchu, Taiwan**
Software Engineer Intern, Touch IC Hardware Design Team — June 2024 - July 2024
Touch and Display Driver Integration Deep Learning Model
- Designed and implemented a lightweight depthwise CNN architecture (0.06 MB, 14K params, 18.46M MACs) for touchscreen environment classification, achieving 94% accuracy on 71K capacitance training samples using **PyTorch**.
- Optimized model architecture through 2D-to-1D tensor reshape, reducing parameters by 17%, MACs by 52%, and hardware resource utilization while maintaining 93% accuracy.
- Enhanced data quality through baseline canceling for noise reduction and augmentation for class balance.
- Validated model effectiveness through t-SNE visualization, demonstrating clear separation of operating environments.

Intel Corporation — **Taipei, Taiwan**
Datacenter Technical Sales Specialist Intern, DCAI Platform Sales Enablement Team — July 2022 - July 2023
Design-win Project Tracking Tool
- Developed **Python** Dash desktop application enabling PMs and FAEs to monitor over 500 design-win projects.
- Automated data analytics and report generation using **Pandas**, reducing project tracking time from 4 hours to 1 sec.
- Created interactive **Plotly** dashboard for visualization, enabling real-time data analysis and reporting.

SKILLS

Languages	Java, Python, JavaScript, TypeScript, C, C++, R, SQL
Web Development	React, Node.js, Django, Flask, HTML, CSS
ML & Data Science	PyTorch, TensorFlow, Keras, NumPy, Pandas, Scikit-learn, OpenCV
DevOps & Databases	Git, Docker, CI/CD, AWS, Linux, Unix Shell, MySQL, MongoDB, Cassandra

SOFTWARE PROJECTS

Mailbag System | Node, React, TypeScript, Docker, AWS [GitHub] — Nov. 2024
- Built a full-stack email system using **Node.js** and **Express.js** for REST API integration with IMAP/SMTP protocols.
- Engineered frontend client with **React** and **TypeScript**, implementing secure email operations and real-time updates.
- Dockerized application using **Docker Compose**, optimizing deployment workflow and ensuring consistency across environments. Deployed application on AWS EC2.

ECHO - Efficient Capture & Helpful Output | Flask, React, Ollama, Python, JavaScript [GitHub] — Oct. 2024
- Developed a full-stack platform (**Flask**/**React**) for processing multi-modal educational content (audio, video, PDF).
- Engineered LLaMA-based processing pipeline with custom prompts, generating educational materials within 15 sec.
- Implemented backend services using Flask, REST APIs, and **Ollama** for model interaction and content processing.

Real-time Bad Sitting Posture Detection | Python, TensorFlow, Keras, OpenCV, MediaPipe [Video Demo] — Jan. 2023
- Developed real-time posture detection system with **TensorFlow** and **OpenCV**, achieving 98% accuracy (VGGNet16).
- Processed 450 images using **MediaPipe** for automated feature (skeleton) extraction and **Keras** for data augmentation.

SELECTED PUBLICATION

- Chan Hsu, Ching-Chih Tsao, Yu-Liang Weng, **Cheng-Yi Tang**, Yu-Wen Chang, Yihuang Kang, Shih-Yi Chien, *"A Machine Learning Approach to Model HRI Research Trends in 2010~2021*", ACM/IEEE International Conference on Human-Robot Interaction (HRI 2022) [Paper]