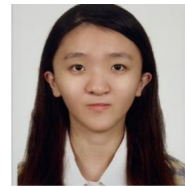


雅涵 楊



PERSONAL DETAILS

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PROFILE

I am a second-year Master's student in the **Department of Computer Science and Information Engineering (CSIE)** at Chang Gung University. My Master's research primarily focuses on the clinical analysis of diffusion MRI (dMRI), integrating medical image processing and computational operations methods to investigate structural damage within the brain. Currently, I'm participating in a short-term research internship at NIPS in Japan, where my work involves the processing and analysis of Magnetic Resonance Encephalography (MREG) signals.

A highly motivated Computer Science and Information Engineering graduate with extensive hands-on experience in machine learning, medical imaging, and algorithm development. Skilled in **developing innovative AI models** and **conducting comprehensive data analyses** to solve complex problems in medical prognosis and image synthesis. Demonstrates strong collaborative abilities through internship and teaching assistant roles, fostering knowledge sharing and skill development among peers and students.

EDUCATION

Master of Computer Science and Information Engineering 2024 - Present
Chang Gung University, Taiwan

- Developing a hierarchical Random Forest model to predict stroke prognosis (mRS score).
- Utilized Pix2Pix GAN for b-value image synthesis and integrated NODDI/FBA metrics to enhance prediction.

Bachelor of Computer Science and Information Engineering 2020 - 2024
Chang Gung University, Taiwan

- Established a strong foundation in computer science and AI.
- Focused on machine learning applications and data analysis through various academic projects, preparing for advanced research in medical imaging and deep learning.
- Co-developed a 360-degree AI automatic remote home visit system.

EMPLOYMENT

Internship Apr 2026 - Jun 2026
National Institute for Physiological Science, Japan

- Developed specialized **FSL** preprocessing pipelines for ultra-fast Magnetic Resonance Encephalography (MREG) data, successfully extracting and denoising very-low-frequency (VLF) brain signals from high-

resolution time series (TR = 0.1s).

- Built an automated **Python** framework to perform frequency-domain analysis (Power Spectral Density) and compute whole-brain Functional Connectivity (FC) matrices for advanced neural network research.

Teaching Assistant Data Structures and Algorithms

Sep 2023 - Dec 2025

Chang Gung University, New Taipei City

- Assisted in course instruction and conducted assignment demonstrations and provided technical guidance to students, ensuring their thorough comprehension of code logic and algorithmic behaviors.

Project Research Assistant

Jan 2024 - Dec 2024

Dept. of Occupational Therapy, Chang Gung University, New Taipei City

- Supported research initiatives through data management and technical assistance.
- Developed a LINE bot for real-time elderly health monitoring.
- Implemented an automated image-recognition system to identify home fall risk factors and generate assessment reports.

Workshop Assistant

Jul 2024 - Jul 2024

International MRtrix Workshop

- Managed participant registration and event logistics while providing on-site technical support for neuroimaging software and troubleshooting.

SKILLS

C++



MATLAB



JavaScript



Flask



Node.js



Docker



MySQL



Data Preprocessing



Python



Java



PyTorch



React



Git



Linux



MRtrix3



LANGUAGES

English



Mandarin Chinese



HOBBIES

- Data Analysis
- Reading

- Programming
- Music

COURSES

International MRtrix Workshop

Jul 2024

6th MRtrix3 Workshop (Participant): Acquired advanced proficiency in diffusion MRI analysis, with a specific focus on Fixel-Based Analysis (FBA) and fiber tractography. Trained in processing complex neuroimaging data to investigate white matter microstructural alterations for clinical applications.

PROJECTS

ML-Powered Prognosis Prediction in Acute Hyperglycemic Ischemic Stroke Using Diffusion MRI (MREG)

Developing a hierarchical Random Forest model to predict 6-month mRS scores for ischemic stroke patients.

- Leveraged Pix2Pix GAN to synthesize high b-value ($b=2000$) images and integrated NODDI/FBA metrics.
- Achieved a model accuracy of 86.4% and an AUC-ROC of 0.871.

2023 NHRI Online MRI Analysis Platform

2023

Built a web-based analysis platform for automated neuroimaging file processing.

- Used Python Flask and HTML to allow researchers to upload neuroimaging files for automated processing.
- Included real-time progress tracking and automated storage management to ensure server efficiency and data security.

2022 360° 5G AI Smart Remote Home Visit System

2022 - 2024

Developed a senior project using 360° camera and YOLOv5 models for remote home visit hazard detection.

- Detected and labeled environmental hazards and transmitted live footage to VR systems used by occupational therapists.
- Reduced required duration for clinical home visits.