Hongwen Pu

Year 1, MEng Mathematical Computation
University College London
Email: hongwen.pu.25@ucl.ac.uk   Website: hongwen-pu.cn

Research Interests

- Mathematical foundations of machine learning
- AI model verification and safety
- Algorithmic ethics and policy
- Game-theoretic modelling of learning systems and educational fairness

Publications

Pu, H., Yi, K. (2024).
A Comparative Analysis of EfficientNet and MobileNet Models' Performance on Limited Datasets: An Example of American Sign Language Alphabet Detection.
Highlights in Science, Engineering and Technology, 94, 558–564.
DOI: 10.54097/yh5d3s04.

- Compared two popular lightweight CNN architectures - EfficientNet and MobileNet under limited-data constraints.
- Evaluated performance across 5,10, and 20 training epochs on merged ASL datasets with sources taken from Kaggle
- Observed an early-epoch performance advantage of MobileNetV2 and systematic overfitting behaviour beyond 10 epochs.

Accepted by the 2024 2nd International Conference on Computer, Machine Learning and Artificial Intelligence (CMLAI 2024); 8 citations (Google Scholar); 496 publisher-page downloads as of Nov 2025.

Research Experience

American Sign Language Spelling Recognition System and Educational Game (2024)

- Developed a MobileNet-based ASL alphabet recognition system using a low-code platform, Edge Impulse
- Deployed the trained model to a web-based interactive learning game through Edge Impulse SDK with Vue.js
- Achieved the highest overall grade among all project groups

Role: Model training, frontend development, deployment, final viva presentation.

MVITA: Multi-Cultural Virtual Interview Agent (Hackathon Project, 2025)

- Developed a web-based virtual interview system for cross-cultural job preparation through GPT4.5 API and GPT4.5-based Anam SDK
- Implemented frontend using Vue.js and Anam SDK; backend using Python (Flask).
- Integrated GPT API for interview question generation in cultural contexts.

Role: Frontend development, SDK integration, prompt engineering.

Education

University College London   London, UK
MEng Mathematical Computation (Computer Science and Mathematics)   2025–Present
Currently at Year 1
Relevant Coursework: Analysis 1, Algebra 1 & 2, Mathematical Methods 1, Theory of Computation, Algorithms, Principles of Programming, OOP

Dulwich College (Singapore)   Singapore, Singapore
IB Diploma (Bilingual)   2023–2025
HL: Mathematics AA (7), Computer Science (7), Physics (6)

Skills

Programming: Python, JavaScript/TypeScript, Vue.js, Node.js, Java, C, Haskell
Tools: LaTeX, Git
Languages: Chinese (Native), English (C2), Japanese (B1–B2)

Teaching Experience

UCL Chinese Students and Scholar Association (CSSA)
Higher-Level Chinese Instructor, Department of Chinese Education   2025–Present

- Designed and delivered advanced Chinese Language and Literature courses to second language students
- Led close-reading and literary analysis on "Taipei People"
- Integrated linguistic, cultural and historical perspectives into the course

Hangzhou DX Future
Founder & Curriculum Designer   2025–Present

- Founded an educational initiative for senior secondary and university students in China
- Designed interdisciplinary curriculum focused on global vision, critical thinking and research skills
- Currently developing the "General Knowledge" module of the overall course

Dulwich College (Singapore)
HiMCM Coordinator & Mathematical Modelling Teaching Lead   2023–2025

- Coordinated student's participation at DCSG in the HiMCM competition - a competition that tests students' ability to construct mathematical models and work collaboratively
- Taught modelling methods, including AHP and TOPSIS, with the emphasis on conceptual understanding