Edward (Ying-Lun) Cheng

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Education

University College London (UCL) London, UK

MSc Machine Learning (First-Class Honours) *Sep 2021 - Sep 2022*

- Core modules: Supervised Learning, Machine/Robot Vision, Natural Language Processing, Data Mining
- Graduated with Distinction (First-Class Honours).
- Computer vision and deep learning related final project.

University College London (UCL) London, UK

BEng Electronics & Electrical Engineering (First-Class Honours) *Sep 2018 - Sep 2021*

- Core modules: Machine Learning, Intelligent Systems, Mathematical Modelling and Analysis
- Graduated with Distinction (First-Class Honours).
- CNN and CycleGAN related final project. Performed deep learning on audio signals.

University College London (UCL) London, UK

University Preparatory Certificate for Science & Engineering *Sep 2017 - Sep 2018*

- Equivalent to A-levels. Aimed at students with high academic ability in science and engineering.
- Graduated with Distinction: Science and Society 80%, Math 92%, Physics 73%, Academic English 79%.

Experience

Intern @ CYENS London, UK

Semantic segmentation of aerial imagery *Jun 2022 - Sep 2022*

- Implemented building detection using U-net based on TensorFlow and across 3 dataset to ensure consistency of the model.
- Increased performance by $1-2\%$ (metric used: Intersection over Union).
- Introduced a unique (not found in any of the 30+ references reviewed, approved by the supervisor) data augmentation technique (boundary addition during training) and post-processing (fake positive erosion).

Projects

Stock Trading Strategy based on Moving Average *Jan 2023 – Feb 2023*

- Researched and improved a trading strategy that outperformed Dollar Cost Averaging by 84% (trading periods tested ranged from 6 months to 6 years).
- Analysed and visualised (over 3 types of graphs to best represent different scenarios) to make the results easy to present and understand.

Multi-task learning with Efficient-Net *Dec 2021 - Jan 2022*

- Built multi-task learning models (3 tasks successfully combined) using TensorFlow and pet dataset.
- Extended TensorFlow Efficient-Net and investigated the effects of auxiliary tasks, resulting in a 5% improvement in accuracy.

Deep Learning method comparisons with an Ablation study *Nov 2021 – Dec 2021*

- Compared 3 regression models and the use of stochastic gradient descent (SGD).

- Based on DenseNet and using cifar-10 as the dataset, applied cross-validation, data augmentation, and various optimisers to improve the final result by 10%.

Maze solving problems with Reinforcement Learning *Oct 2021 – Nov 2021*

- Trained robots using a deep deterministic policy gradient that solved 2 different mazes with randomly assigned destinations.
- Simplified the random paths into 3 fixed starting points to allow quantitative analysis. The novel analysis received full marks.

Emotional Voice Conversion *Nov 2020 - Apr 2021*

- Extended PyTorch CNN models and TensorFlow CycleGAN models. Achieved 2 deep learning voice conversion models approved by the professor.
- Self-taught most of the materials and topics required, including CNN, CycleGAN, Mel Spectrogram, parallel and non-parallel training, etc. Graded A by several academic supervisors.

Monthly Engineering Challenges *Sep 2018 - Apr 2021*

- Led teams of 4-7. Assigned team members to software and hardware groups to ensure the project was completed on time and to the highest quality.
- Provided support to both software and hardware teams (Arduino, Python, circuit design, etc).
- Designed a digital power supply from scratch. Final PCB design outperformed the other 5 team members; represented the team for the final assessment, graded A.

See My Website for more projects and details

Publication

- Lin, M. Y., Nguyen, T. T., Cheng, E. Y., Le, A. N., & Cheng, J. M. (2022). Proximity Marketing and Bluetooth Beacon Technology: A dynamic mechanism leading to relationship program receptiveness. Journal of Business Research, 141, 151-162. doi:10.1016/j.jbusres.2021.12.030

Additional Experience

UKEAS (Study world spring exhibition) Tainan

University Representative Assistant *Feb 2021 – Mar 2021*

- Helped over 30 prospective students communicate with university representatives.

University College London (UCL)) London

Physics Student Representative *Sep 2017 – Jun 2018*

- Gathered, organised, and presented feedback from over 100 students.
- Re-designed the remaining 3 coursework with the professors.

Self-employed Tainan

Physics Tutor *Jun 2017 –Sep 2019*

- Tutored high school physics. The student was accepted by Department of Electrical Engineering, National Taiwan University (ranks 15th-20th worldwide in the field of Electronic Engineering).

Skills & Interests

- Technical skills: Python (scikit-learn, TensorFlow, PyTorch, NumPy, pandas, Matplotlib), MATLAB, C++, Java, HTML, CSS, MySQL, LaTeX, Multisim, RoboDK
- Languages: Mandarin (Native), Taiwanese Hokkien (Native), English (Fluent)
- Interests: UCL badminton team, calligraphy, photography, go chess