Edward (Ying-Lun) Cheng

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EDUCATION

University College London (UCL) London, UK
MSc Machine Learning (First-Class Honours) *2021-2022*

- Core modules: Supervised Learning, Machine/Robot Vision, Natural Language Processing, Data Mining.
- Computer vision and deep learning related final project.

University College London (UCL) London, UK
BEng Electronics & Electrical Engineering (First-Class Honours) *2018-2021*

- Core modules: Machine Learning, Intelligent Systems, Mathematical Modelling and Analysis.
- CNN and CycleGAN related final project. Performed deep learning on audio signals.

University College London (UCL) London, UK
University Preparatory Certificate for Science & Engineering (Distinction) *2017-2018*

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

Tainan First Senior High School Tainan, Taiwan
The Elite Class *2014-2017*

- Unlike the normal high school system, the Elite Class is designed and offered by Taiwan's Ministry of Education to educate those who are talented in STEM (limited to less than 250 students nationwide per year).

EXPERIENCE

CYENS London, UK
Deep Learning Intern *Jun 2022- Sep 2022*

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

PROJECTS

Stock Data Analysis and Trading Strategy Development *Jan 2023 – Present*

- Researched and improved a trading strategy that outperformed Dollar Cost Averaging by 84% (trading periods tested ranged from 6 months to 6 years). Developed a backtesting system.
- Analysed and visualised the results (over 3 types of graphs to best represent different scenarios) for clear presentation.

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 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 use of stochastic gradient descent (SGD).
- Based on DenseNet and using cifar-10 as dataset, applied cross-validation, data augmentation, and various optimisers to improve 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 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 professor.
- Self-taught most 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 projects were completed on time and to 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 other 5 team members; represented team for final assessment, graded A.

See My Website for more projects and details

PUBLICATION

Lin, M.Y.C., Nguyen, T.T., **Cheng, Edward Ying-Lun**, Le, A.N.H., and Cheng, J.M.S. (2023), "Proximity marketing and Bluetooth beacon technology: A dynamic mechanism leading to relationship program receptiveness", *Journal of Business Research, 141*, 151-162 (2021 SSCI IF: 10.969, JCR in Business 17/154, Q1).

ADDITIONAL EXPERIENCE

University Representative Assistant Tainan, Taiwan
UKEAS (Study world spring exhibition) *Feb 2021 – Mar 2021*

- Helped over 30 prospective students communicate with university representatives.

Physics Tutor Tainan, Taiwan
Self-employed *Feb 2021 – Mar 2021*

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

Physics Student Representative London, UK
University College London (UCL) *Sep 2017 – Jun 2018*

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

SKILLS AND INTEREST

Technical skills: Python (scikit-learn, TensorFlow, PyTorch, NumPy, pandas, Matplotlib), Excel, 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.