Deng Pan

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Education

MSc in Integrated Machine Learning Systems — *London, UK*

Electronic and Electrical Engineering Department, University College London — *09/2022 - Present*

- Relevant modules: Applied Machine Learning Systems (I & II) | Data Acquisition and Processing Systems | Cloud, Data Centres and Edge-Computing | Security and Privacy | Deep Learning for Natural Language Processing | Internet of Things | Emerging Topics in Integrated Machine Learning Systems

BEng in Electronic Engineering(First Class Honours) — *London, UK*

Engineering Department, King's College London — *09/2019 - 06/2022*

- Overall GPA: 89/100 Final Project: 85/100
- Relevant modules: Machine Learning for Engineers | Computer Vision | Brain-Inspired Computing and Hardware Design | Foundation of Computing (I & II) | Computational and Mathematical Thinking for Engineers (I & II) | Logic Design | Real Time Systems and Control | Hardware Design | Computer System

Recent Publications

Decentralised federated learning methods for reducing communication cost and energy consumption in UAV networks — *Peer-review*

13th EAI International Conference on Mobile Computing, Applications and Services — *10/2021 - 08/2022*

- Authors: Deng Pan, Mohammad Ali Khoshkholghi, and Toktam Mahmoodi

Research & Project Experience

Decentralised federated learning methods for reducing communication cost and energy consumption in UAV networks — *London, UK*

Further Research Based On Undergraduate Graduation Project — *4/2022 - 07/2022*

- Conducted further research on communication cost and energy consumption based on my undergraduate graduation project.
- Optimised the code for reading the file transfer size to aid communication consumption.
- Regarding energy consumption, the flight power consumption calculation of the drone was optimised, alongside developing communication and computing comparison.
- Based on my graduation project report, a paper was written according to the conference party's requirements.

A Study of Decentralised Federated Learning for UAV Networks — *London, UK*

Undergraduate Graduation Project — *10/2021 - 04/2022*

- Designed a UAV network architecture, applying decentralised federated learning for future smart cities.
- Proposed two novel aggregation methods to adapt to the complex operating environment of UAVs.
- Efficacy was demonstrated through numerical simulations and comparison with two benchmark methods.
- Entire project code was designed and tested based on Python implementation.

Hardware-Software Co-design of Neuromorphic Networks — *London, UK*

Undergraduate Group Course Project — *10/2021 - 12/2021*

- Designed a spiking neural network for the MNIST handwritten digit benchmark problem, based on pertinent literature and code provided by the lecturer.
- Responsible for the group's parameter tuning and experiment in learning rate of Fix Decay and Cyclic Decay, and for assembling and visualizing everyone's data.

Honors & Awards

2022	**The Jelf Medal,** Highest achiever during the UG course	*King's College London*
2022	**John Oriel Prize,** Highest grade in the final examination of the UG Informatics programme	*King's College London*
2022	**KCLEA Medal,** Highest achiever in their individual final year project	*King's College London*

Skills

Programming	C (3 months), Python (2 years), Matlab (3 years), VHDL (3 months), Latex (2 years)
Software	Visual Code Studio, Quartus, Jupiter Notebook, Anaconda
Languages	English, Chinese