Henry Truong

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Interested in leveraging ML to tackle practical challenges, looking to contribute to a team working on impactful projects. Experience in data analysis, modelling, and programming, in particular Python and its ecosystem.

Education

Durham University — Durham, UK
Doctor of Philosophy, Theoretical Particle Physics — *October 2018 – Present*

I applied neural networks to emulate computationally expensive expressions describing scattering probabilities of particles to accelerate Monte Carlo simulations, a crucial part of the Large Hadron Collider physics experiment.

Durham University — Durham, UK
Master of Physics, First Class Honours — *October 2014 – Jul 2018*

Projects & Experience

FAME: factorisation-aware matrix element emulator — IPPP, Durham, UK
Postgraduate Research Student — *October 2018 – Present*

- Created and developed a deep neural network model to emulate computationally expensive expressions, accelerating sample evaluation speed by up to four orders of magnitude compared to traditional methods
- Acquired expertise in writing custom software within the Python ML ecosystem, including extensive usage of NumPy, TensorFlow, Keras, scikit-learn, and ONNX
- Became proficient in profiling Python code in order to optimise code execution time
- Obtained experience in interfacing Python with high performance languages such as C++ and Fortran

JUNE: individual-based epidemiology simulation of England — IDAS, Durham, UK
Data analysis and HPC deployment — *March 2020 – June 2021*

- Developed Python software for large scale deployment of memory intense simulations on supercomputers and grid based computing clusters
- Gained experience in using Pandas for extracting data and creating summary statistics from large model output database
- Acquired skills in data visualisation to communicate key findings to interdisciplinary team in a time sensitive environment

IBEX Innovations — Sedgefield, UK
Research Intern — *May 2019 – Jul 2019*

- Developed a multi-scale image post-processing pipeline in Python to increase fidelity of x-ray medical imaging, improving visibility of key features

Technical Skills

Languages : Python, Julia, C/C++, R, SQL, CUDA, Fortran
Tools : VS Code, Git, Jupyter, Linux, Conda, TensorFlow, NumPy, Pandas, Matplotlib, scikit-learn, ONNX

Additional Skills

Public Speaking

- Experience in presenting my research at international conferences and seminars, in person and remotely
- Apart from communicating ideas to a technical audience, I have performed public outreach to school children of various ages and parents alike

Organisation

- Curated seminar series for students by inviting weekly speakers
- Captain of collegiate table tennis team, organising weekly training sessions and matches