

Henry Truong

htruong0.github.io

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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

Doctor of Philosophy, Theoretical Particle Physics

Durham, UK

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

Master of Physics, First Class Honours

Durham, UK

October 2014 – Jul 2018

Projects & Experience

FAME: factorisation-aware matrix element emulator

Postgraduate Researcher

IPPP, Durham, UK

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

Data analysis and HPC deployment

IDAS, Durham, UK

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

Research Intern

Sedgefield, UK

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, 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

Organisation

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