Tianyue Yang

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Education

University of Cambridge — **Cambridge, UK**
MPhil in Data Intensive Science — Oct 2025 - Sep 2026

Imperial College London — **London, UK**
BSc in Theoretical Physics, Year 3 — Oct 2022 - Jun 2025

• **Grade**: 75, First Class Honour

• **Modules**: Maths Analysis, Mechanics and Relativity, Oscillations and Waves, Practical Physics, Statistics of Measurement and the Summer Project, Vector Fields & Electricity and Magnetism, Advanced Practical Physics, Thermal Physics and Structure of Matter, Differential Equation and Electromagnetism, Quantum Physics, Sun, Stars and Planets, Mathematical Methods

Professional Experience

Deep Learning in Weather Forecasting and Now-casting — **Singapore**
Singapore Agency for Science, Technology and Research — Jun - Aug 2024

• **Teamwork**: Funded project under the supervision of Dr Ooi Chin Chun. Worked in a Group of three to develop a Machine Learning pipeline including data module, trainer and results analysis in JAX with Flax.

• **Computational Proficiency**: Achieved acceleration of training and data-loading utilising the JIT compilation function of JAX compared to PyTorch implementation.

• **Time Series Analysis with AI**: Implemented a Latent Diffusion model, consisting of Variational Autoencoders and DDPM-based conditional diffusion models. Explored different attention mechanisms to better predict the future radar signal data in areas with unstable meteorological conditions.

Deep Learning in Quantum Multi-body Simulation — **London, UK**
Imperial College London — Aug - Oct 2024

• **Independent Research**: Funded project under the supervision of Prof Matthew Foulkes. Worked independently to implement Transformer-based model (PsiFormer) based on existing research with a Variational Monte Carlo framework in JAX with Flax to study quantum multi-body systems.

• **Quantum Monte Carlo with AI**: Applied neural-network-based method to study muonic systems that are difficult to investigate with other approaches, achieving higher accuracies.

Research Interests

• **AI for Science**: The application of statistical Machine Learning and Deep Learning in the fields of Physics, including Computational Fluid Dynamics (CFD) and Quantum Chemistry.

• **Generative Modelling**: The theory and application of generative modelling, especially diffusion-based models (Consistency Models, Flow Matching, MeanFlow)

Languages and Skills

• **Awards:** UK Chemistry Olympiad (*National Top 30*), British Physics Olympiad (*Gold*), UKMT Senior Maths Challenge (*Gold*), Cambridge Chemistry Challenge (*Top 1%, Roentgenium Award*).

• **Programming Languages: Python** (for Machine Learning, Deep Learning and Data Science with **TensorFlow 2** and **Flax** with **JAX**) (*proficient*), **LaTeX** programming (*proficient*), **C++** (for Scientific Computing)

• **Languages**: Chinese (*native*), English (*native*) and Japanese (*proficient*, *N1 Certified*).

Last updated: February 16, 2026