

# STEVE HONG

✉ [stevehongforwork@gmail.com](mailto:stevehongforwork@gmail.com) [in linkedin.com/in/steve-hong-1901](https://www.linkedin.com/in/steve-hong-1901) [github.com/SteveHong1901](https://github.com/SteveHong1901)

## Education

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### University of Cambridge - MPhil Machine Learning & Machine Intelligence Sep 2024 - Sep 2025

- Candidate for the Machine Learning Track of the 11-month intensive programme that covers advanced topics in Deep Learning, Probabilistic Learning, Reinforcement Learning, Natural Language Processing and Computer Vision

### University College London - BSc Statistics Sep 2021 - Jun 2024

- **Grades:** First-Class Honours and ranked in **top 10%** of cohort, receiving **Best Thesis Award** by the department
- **Modules:** Machine Learning, Probability Theory, Bayesian Statistics & MCMC, Financial Mathematics, Time Series Methods
- Collaborated in 15+ technical individual and group projects that involves developing new libraries and data analysis

### DLD College London - A Levels & GCSE Sep 2018 - Sep 2021

- **Grades:** Mathematics (A\*), Further Mathematics (A\*), Economics (A\*), Physics (A), AEA Maths Awards (top 5% nationally)
- Awarded an academic excellence scholarship covering £80,000 of tuition fee for best student in Mathematics and Economics

## Professional Experience

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### J.P. Morgan & Chase - Data Science Summer Analyst Jun 2024 – Aug 2024

- Enhance Wealth Score prediction RMSE by 15% using Ridge Regression and Gradient Boosting on a 100-dimensional dataset
- Identify \$3BN of investment interests with CatBoost classification and synthetic data generation from an imbalance dataset
- Design Talbeau dashboards to provide insights into 5,000 client profiles to 200 advisers in EMEA, APAC, and LATAM

### J.P. Morgan & Chase - Data Science Summer Analyst Jun 2023 – Aug 2023

- Speed up by 10% J.P. Morgan's investment content analyses by developing a document classification model leveraging LLM
- Fine-tuned FinBERT for customised financial named-entity recognition, achieving 20% better F1 Score than out-of-the-box models
- Implemented a complete data pipeline, from data ingestion to processing and analysis, leading to a model in active deployment

### IMC Trading - Masterclass Programme in Quantitative Trading Oct 2022–Oct 2022

- Selective in-person student programme for training in market making, probability and macro-economics
- Ranked 1/10 groups for a hackathon in programming a trading algorithm that exceeded performance of IMC's algorithm

### Jane Street - Spring Week in Quantitative Trading Apr 2022–Apr 2022

- An in-person training programme in probability and market making through numerous interactive games
- Engaged in three days of exercises in applying probability and statistics to estimate prices and to make decisions in market making

### Goldman Sachs - Spring Week in Engineering Mar 2022–Apr 2022

- Selected among 4000+ candidates for six days to work-shadow and network with quantitative strategists
- Ranked 1/5 in a hackathon where my team designed a investment recommendation platform incorporating machine learning

## Research Experience

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### Thesis - Non-Stationary & Multi-Task Gaussian Processes for Wind Turbine Monitoring Sep 2023 – Jun 2024

- Researched 3 new Gaussian Process regression models to improve wind power predictions, supervised by Prof. Petros Dellaportas
- Engineered a GPyTorch code base for Non-Stationary Spectral Kernel leading to a 20% reduction in RMSE and NLPD
- Submitted a research article on the development and application of these methods to the Renewable Energy journal

### Research Project - Bayesian Logistic Regression to Address High Multicollinearity Mar 2024 – Apr 2024

- Stabilised parameter estimates in logistic and cauchit regression models using Bayesian inference with MCMC
- Boosted Brier scores by 50% through candidate distribution selection, leveraging heavy-tailed properties and preconditioning
- Diagnosed convergence using effective sample sizes and trace plot analyses of 24 different candidate distributions

### Research Project - Bayesian Inference in Heston's Model Dec 2023 – Feb 2024

- Investigated key derivations and results in the Heston's stochastic volatility model for option pricing
- Explored the literature on MCMC methods for approximating Bayesian inference of the parameters in Heston's model
- Produced code for MCMC parameter inference and diagnosed convergence using effective sample sizes and trace plot analyses

## Skill Summary

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**Programming Languages:** Python, R, PostgreSQL, LaTeX, Bash

**Libraries/Tools:** PyTorch, TensorFlow, Transformers, Pandas, Numpy, Matplotlib, PySpark

**Languages:** English (Proficient), Vietnamese (Native)

**Interests:** Professional photography and Architecture