Raymond Wong

PhD – Applied Machine Learning | **MSc** – Engineering Mathematics

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Education

Imperial College London | **PhD Applied Machine Learning** (2022–**Present**)

- Web-scraped published data and built machine learning models (XGBoost, LightGBM, Neural Networks) to predict properties and uncover novel insights into underlying physics using sensitivity and statistical analysis
- Built symbolic regression machine learning models to derive interpretable expressions revealing underlying physics
- Applied dimensionality reduction (PCA, CCA) to reveal multivariate relationships and latent patterns within data
- **Awarded Best Research Poster** at International Symposium on Advances in Metallurgy

University of Bristol | MSc Engineering Mathematics | **Distinction** (2020-2021)

- Notable modules: Research Project (78%), Intelligent Information Systems (78%), Applied Statistics (75%), Research skills (74%), Mathematical and Data Modelling (72%), Optimisation Theory and Applications

University of West of England | B.Eng Mechanical Engineering | **First Class** (2014-2017)

- **Dean's List Award** (twice), top percentile in Engineering Maths 1 (98%) and Engineering Maths 2 (96%)

Experience and Competitions

Daler Trading | **Quantitative Researcher** (2025 – **Present**)

- Designed and implemented trading strategies across directional and market-making styles, focusing on short-hold signals, time series regression, cointegration, and delta-hedging options portfolios
- Improved strategy performance through transformer-based deep learning models and volatility surface analysis to extract predictive signals

IMC Trading | Algorithmic Trading Competition | **9th UK** | **107th Global** (2025)

- Implemented market making with Avellaneda-Stoikov, Black-Scholes option pricing, dynamic delta hedging, gamma scalping, and Bayesian optimisation to fine-tune strategy parameters to maximise risk-adjusted returns

Anthropic Agents Hackathon | Market AI Agent (2025)

- Built real-time AI agent with Langflow to monitor macro indicators, summarising news and analyst views to deliver actionable insights and risks via automated email digests, providing accelerated informed decisions

Man Group | Hackathon (2024)

- Developed automated portfolio weight optimisation for finmarketpy package, enabling users to input custom strategies and target metrics (e.g. Sharpe ratio) to maximise P&L, implementing examples such as FX CTA strategies

QuantMinds | TradeEntry Hackathon (2024)

- Leveraged LLM-driven parsing to improve accuracy in extracting trade details from unstructured descriptions into structured fields such as notional amount and payment terms, increasing accuracy from **50%** to over **90%**

Morgan Stanley | Code to Give (2023)

- Spearheaded development of a multi-input story generator web app for children with impairments, using convolutional neural networks to interpret sign language from a user's camera feed, alongside text and speech inputs

OrionHack | Space Hackathon | **2nd Place** (2023)

- Trained an LSTM model to predict collision risk between satellites and space debris with real-time visualisation

AlgoTrading Society | **Head of Corporate Relations** (Oct/2023 – Present)

- Secured over **£20,000** in sponsorships from leading firms (QRT, HRT, IMC, Wintermute) to organise UK's largest student-led algorithmic trading hackathon, with 450 participants and 800 applications from leading universities

Imperial College London | **Graduate Teaching Assistant** (Oct/2022 – Present)

- Taught Mathematics and Python, covering fundamentals, particle simulation, data analysis, and machine learning

Additional Information

Publications

- Wong, R., *et al.*, "Critical statistical assessment of data in metal additive manufacturing," **Materials & Design**, doi.org/10.1016/j.matdes.2025.114301
- *Interpretable machine learning for process–property of steels*, invited submission to **Journal of Applied Physics**

Technical Skills:

- *Programming*: Fluent in Python (NumPy, Pandas, SciPy, Matplotlib, Scikit-learn, PyTorch)
  Experienced with C++, SQL, R, Java, and MATLAB
- *Data Analysis*: Machine learning, Time series analysis, Dimensionality reduction, Statistical modelling