Alexander Walter – Curriculum Vitae

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– EDUCATION –

ETH Zürich | MSc Computational Biology and Bioinformatics **September 2021 – July 2024**

- Notable courses taken: Deep Learning | Probabilistic Artificial Intelligence | Probability and Statistics | Data Structures and Algorithms | Mathematical Optimisation | Machine Learning | Data Mining | Computer Science, Random Processes: Theory and Applications from Physics to Finance.

Saïd Business School, University of Oxford | Algorithmic Trading **July 2021 – August 2021**

Imperial College London | BSc Biochemistry **October 2018 – September 2021**

- First-Class Honours (Years 1, 2, 3)

City of London School **September 2013 – June 2018**

- A-levels: Mathematics **(A)** | Further Mathematics **(A)** | Chemistry **(A)** | Biology (**D1** – higher than **A***)
- IGCSEs: **11A***

– PROFESSIONAL EXPERIENCE –

Quantitative Trading Intern | Mako Trading – London, UK **July 2024 – August 2024**

- Placed highest amongst 20 other interns across tasks including equity analysis, options theory, and quantitative research on delta hedging.
- Trained on a simulation platform for trading single options, spreads, and more complex strategies.
- Gained hands-on experience in various options market-making operations.

Master Thesis | ETH Zürich Khammash Lab (D-BSSE) – Basel, Switzerland **January 2024 – July 2024**

- Developed a novel highly efficient deep learning method to solve the forward and backward problems of high-dimensional stochastic reaction networks using Variational Autoregressive Networks.
- Work to be submitted to Nature Machine Intelligence Journal for publication.

Research Intern | IBM – Zürich, Switzerland **September 2023 – January 2024**

- Improved a stochastic model for biochemical reaction networks in the lymph node.

Analyst/Trading Intern | Freepoint Commodities – London, UK **August 2023 – September 2023**

- Developed machine learning models for predicting UK power prices and trading TTF natural gas.
- Built dashboards for backtesting and visualising performance of prediction models.
- Developed stochastic process models for determining market regimes.

Mathematics, Biology, Chemistry Tutor | Albion Company **August 2020 – August 2023**

Intern | Tullett Prebon – London, UK **September 2018**

- Aggregated and analysed various commodity market data and gained understanding of how power, gas, oil, and their derivatives, are brokered and traded.

– ACHIEVEMENTS –

- 1st Dan black belt in Karate, having competed nationally and internationally for England.
- Captain of Imperial College London's 1st BUCS Water Polo team (2020-2021) playing in the top UK university sports league, having finished captaining the university's London League team to 1st place.
- Qualified for the British Mathematics Olympiad as a result of scoring in the top 0.3% of 300,000 candidates in the Senior Mathematics Challenge.

– SKILLS AND INTERESTS –

- **Languages:** English (fluent) | Russian (fluent) | French (intermediate) | German (basic)
- **Software/Programming languages:** Linux, TeX, Microsoft Office | Python, R, MATLAB, C++, SQL
- **Libraries/Frameworks:** PyTorch, TensorFlow, Dash, Git
- **Interests:** Boxing | MMA | Chess | Skiing | Investing | Trading | Sports Betting | Machine Learning