Alex Carr

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Education

Massachusetts Institute of Technology **July 2024 – Feb 2026**
Master's in Financial Mathematics *Cambridge, MA*
GPA: 4.8 / 5.0 (excl. summer bootcamp) while working full-time | Full merit scholarship for academic excellence (top 1% of admits)
Modules: Mathematical Statistics (A), PhD Machine Learning & Deep Learning (A), PhD Causal Inference (A), Fin. Markets (A)

University of Edinburgh **(Gap Year 2022 - 23) Sept 2019 – May 2024**
BSc in Economics with a secondary in Applied Mathematics *Edinburgh, UK*
Top of cohort while working full-time | Started college a year early | Won 5 academic prizes, including the best thesis in economics

Founder Experience

Adria Academy **Jan 2020 – May 2025**
Founder and CEO of a tutoring company *Prague, CZ*

- I lost my father to addiction and homelessness in high school, which I meant I could not afford college. I refused to compromise on my future and started a tutoring company that has regularly generated well over $100k in annual revenue profit (EBT).
- Established a top-of-market track record: all clients admitted to top 10 colleges (incl. MIT, Oxford, Cambridge, UPenn or Cornell), numerous top 5% students at top 10 colleges (e.g LSE or Cambridge), and global top scorers in high school exams (e.g IB).
- Tutored 3000+ hours and actively support students at top 10 colleges, effectively quadrupling my coursework every semester; subjects range across the humanities, social sciences, and STEM (e.g. just at LSE, I did Maths, Econ, Finance, Politics, History).
- Our services focus on excellence, trust, and kindness – we have never had a client leave and serve them for at least 18 months.

Professional Experience

Harvard & MIT **Jan 2025 – Present**
Machine Learning Researcher (Python) *Cambridge, MA*

- Harvard: Engineered an NLP script that parses through 10mil+ articles, and uses embedding methods to detect if the technology was a surprise to the world (e.g. DeepSeek) – used to measure if surprises impact global R&D (patent issuance & funding).
- MIT: Designing loss functions for fully systematic L/S equity and options machine-learning trading models that restrict the probability of entering high-loss trades, adapting Snell et al. (2022) to trading strategies under MIT Professor Hui Chen.

McKinsey & Co. **June 2022 – Sept 2023**
Senior Business Analyst (03 - 09/2023) & Intern (06 - 09/2022) *Central Europe*

- Worked full-time for 6 months during a gap year and received a return offer for Senior Business Analyst (PE and Energy Teams).
- Designed operations that halved the average connection time to the energy distribution lines for 3.5M people in Eastern Europe by identifying, testing, and implementing over 15 engineering, financial, and operational improvements.
- Created a merger model and standalone valuations for a 15B+ USD merger of cyber-security leaders (APV, DCF, Unit Costs).

VinaCapital **Sept 2022 – February 2023**
Macroeconomist & Equity Strategist Intern *Saigon, VN*

- Co-authored fortnightly reports on macroeconomic developments in Asia for the Vietnamese Prime Minister, ASEAN institutional investors, and the fund's investment division (e.g. FX event studies or modeled impacts of Vietnam's credit crunch on equities).
- Modeled and forecasted Vietnam's macroeconomic variables (Python): 2022 GDP growth and inflation (0.1 pp error), Q4 2022 CPI (0.1 pp error), Vietnam's rice price (0.2 pp error), EM FX rates, or also developed measures of Asia's slow de-dollarization.

Deloitte **June 2020 – September 2021**
Consultant in Energy Team (full-time while in college, youngest in Europe) *Central Europe*

- Led a team that co-wrote parts of the Czech green transition plan, focusing on how to use fiscal policy tools and EU funding programs to manage the socio-economic impact of phasing out cola on coal-mining regions (e.g. unemployment or retraining).

Finance Projects

Quantitative L/S Project (Python) **March 2025**

- Collected and cleaned data (e.g. merged data across correct PERMNOs, ensured point-in-time data, etc) on all the firms from the Russell 1000 index from 2000 to 2024 (45 fundamental variables) using Bloomberg, LSEG, and WRDS.
- Achieved 1.52 Sharpe out-of-sample (period: Jan 2020 to Dec 2024) using a model that uses a one-dimensional CNN structure, an encoder layer, a self-attention block, and a reconstruction layer to predict one-month returns.
- Ran a Long/Short strategy (top and bottom 20% with a one-month holding period), while being factor neutral, restricting position size to 2%, limiting drawdowns to 5% and annual vol. to 12%, and managing T-costs.

Miscellaneous Quantitative Finance Projects (Python) **2024 - 2025**

- Following Lo & MacKinley (1988), conducted regression event studies on the impact of Fed & Vietnamese central bank announcements, political scandal media announcements, and Vietnamese fiscal policy reveals on the Vietnam Dong (VND).
- Implemented an Hiden Markov Model-driven "risk-on / risk-off" regime signal from PMI, yield-curve slope, and inflation expectations to rotate monthly among the 11 GICS sectors: 1.19 Sharpe OOS between 2018 and 2024.

Additional Awards & Skills

Languages & Skills: Czech (native), English (native), Slovak (professional), Python, R, Stata, Julia, Bloomberg Terminal
Debating: Won global competitions during college, top 20 globally (2019), top 3 in Europe (2018), Czech champion (2018)
Awards: MIT Dean's Fellowship, Merchant Thesis Prize (top thesis, Edinburgh), Senior Honors (top of cohort, Edinburgh)