

# SHOMIT BASU

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## EDUCATION

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### University College London, (UCL)

Sept 2023 - Present

M.S.c in Computational Statistics & Machine Learning | **Grade:** Distinction (77%)

**Modules:** Supervised Learning, Bayesian Deep Learning, Graphical Models, Statistical Models & Data Analysis, Applied Deep Learning, Applied Machine Learning, Reinforcement Learning, and Multi-Agent AI

#### Research Projects:

- *Multi-Agent Reinforcement Learning Approaches to Algorithmic Trading with a Hierarchical Agent Structure:* A research project for my Multi-Agent AI module examining whether pro-social agents can generate superior investment returns compared to single-agent approaches.
- *ADAPT: Alternating Dynamics and Policy Optimization:* My thesis project, developing a novel algorithm for model-based reinforcement learning in continuous state and action spaces. The approach leverages a formulation inspired by the Neumann series solution for Markov Decision Processes. ADAPT demonstrated optimal learning performance across a diverse range of environments, including OpenAI Gym and DeepMind Control Suite tasks.

### University College London, (UCL)

Sept 2016 - Sept 2019

B.S.c. in Mathematics | **Overall Grade:** 1<sup>st</sup> Class Honours

- Study interests focused on applied mathematics and probability theory in my final year

### Nower Hill High School

Sept 2014 - Sept 2016

- **A-Levels:** Mathematics (A\*), Further Mathematics (A\*), Physics (A)

## EXPERIENCE

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### Goldman Sachs

August 2019 - August 2023

*Associate, Investment Research, External Investing Group*

*London, UK*

- Investor in global hedge funds within Goldman Sachs's external allocations group, managing a portfolio of \$14bn.
- Lead research analyst on quantitative and macro-economic investment strategies. Responsible for producing detailed research memos on existing/ prospective strategies and delivering investment recommendations. Also, built relationships across the industry to source capacity with difficult-to-access investment strategies.
- Developed and deployed several Python-based dashboards that automated statistical analysis and integrated proprietary machine learning models, enhancing investment performance evaluation and decision-making processes.

### Goldman Sachs

June 2018 – August 2018

*Intern, Public Markets Investment Team, Alternative Investments & Manager Selection*

*London, UK*

- Conducted investment due-diligence on European equity long-short hedge funds.
- Independently researched an opportunistic investment proposal to the Hedge Fund Investment Committee. The proposal focussed on the case for investing in medical data companies that utilise advanced computational techniques to generate insights from unstructured electronic medical data.

## TECHNICAL STRENGTHS

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### Computer Languages

Python, R

### Libraries

Numpy, Numba, Pytorch, Tensorflow, JAX, Sklearn, Pandas

### Technologies

Git, Jupyter, Excel