

Dhruv Sharma

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EDUCATION

- University College London (UCL)** London, United Kingdom
BSc Chemistry with Mathematics; First-Year Grade: First-Class Honours, 78%
Sep 2022 - Jun 2025
Courses: Applied Mathematics 1, Mathematics for Science 1 & 2, Physical Chemistry
Activities and Societies: Quant Society, Asset Management Society, ESG Society, Economics & Finance Society
- ACS Hillingdon International School** London, United Kingdom
International Baccalaureate; Grade: 39/45
Aug 2018 - May 2022
Higher Levels: Mathematics Analysis and Approaches (7/7), Chemistry (7/7), Biology (6/7), Economics (6/7)
Activities and Societies: Model United Nations, Student Council, Cross Country

EXPERIENCE

- Sainsbury Wellcome Centre and Gatsby Computational Neuroscience Unit** London, United Kingdom
Research Software Engineer, Neuroinformatics Unit
Sep 2023 - Current
 - Contributed to Movement, an open-source Python package for the kinematic analysis of animal body movements.
 - Utilized testing and continuous integration practices to facilitate open-source collaboration and uphold high code quality.
- S-Cube** Imperial College London
Software Developer Intern
Jun 2023 - Aug 2023
 - Applied autodifferentiation to accurately compute gradients of various cost functions for gradient descent.
 - Utilized Fourier transforms with NumPy library to perform signal processing on seismic data.
 - Vectorised data while calculating the zero-lag cross-correlation of seismic data to improve compute time.
 - Automated data extraction from documents using Python with libraries Pandas, Itables and AWS CLI.
 - Leveraged fine-tuned GPT models and prompt engineering techniques to enable natural language data extraction.
 - Developed chatbots with LLMs, Flask and PostgreSQL, integrated intent detection for API data retrieval.
 - Deployed live web applications with AWS EC2, AWS ELB, Docker, Kubernetes, Nginx, and Git for version control.
- Schroders** London, United Kingdom
Spring Intern
April 2023
 - Acquired knowledge of financial markets, investable assets and the interpersonal skills required in asset management.
- Susquehanna International Group, LLP (SIG)** London, United Kingdom
Spring Intern
March 2023
 - Received an overview of trading at SIG, participated in a market-making game to manage risk and adapt bid-ask spreads.

PROJECTS

- Spatiotemporal Analysis and Prediction of Crime in Philadelphia**
Citadel Europe Regional Datathon
April 2023
 - Worked with four teammates to conduct a spatiotemporal analysis of traffic stops and crime in Philadelphia, using R to determine police efficiency in locating crime hotspots.
 - Trained an artificial neural network from tensorflow.keras to predict the type and time of a crime in such crime hotspots.
 - Allows for effective crime prevention measures, without the ethical issue of predictive policing targeting certain locations.
- Deep Learning Model to Measure User Attention**
Hackathon Submission
March 2023
 - Worked in a team of four as part of a 24-hour hackathon to develop an application to analyse the attention of users during video calls and plot a graph displaying how attention varied over the call.
 - Trained a deep learning model with TensorFlow to measure user attention. Created a full-stack web application using Flask, with Python to process uploaded videos and plot a graph using matplotlib.
- Impact of London's Cycling Infrastructure**
Independent Research Project
Nov 2020 - Jan 2022
 - Wrote a 4000-word research paper, analysing the impact new cycle lanes had on the demand for Santander Cycles.
 - Processed 15GB of data using SQL, Python, and Pandas to visualize the positive effect of cycle lanes on cycling demand.
 - Compared statistical and ML-based time series models, performed STL Decomposition to assess cycling demand changes.

EXTRA-CURRICULARS

- UCL Quant Society** London, United Kingdom
Risk Management Research Group
Aug 2022 - Dec 2022
 - Collaborated with team members to produce a weekly journal of published research in risk management.

ADDITIONAL INFORMATION

- Languages:** English (Fluent), Hindi (Native)
- Coding Languages:** Proficient in Python, experienced in SQL, R, HTML, CSS, and L^AT_EX.
- Interests:** Scuba Diving (PADI Certified Advanced Open Water Diver), Cross Country, Cycling.