Dhruv Sharma

Email: dhruv.sharma.22@ucl.ac.uk
Github: https://github.com/DhruvSkyy
Mobile: +44-7480-476893
LinkedIn: https://www.linkedin.com/in/dhruvsharma-ucl/
Website: https://www.dhruvs.com/

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

- **S-Cube** — London, United Kingdom
  Software Developer Intern — *Jun 2023 - Current*
  - Applied autodifferentiation to accurately compute gradients of various cost functions for gradient descent in seismic data.
  - 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 and deployed chatbots with LLMs and embeddings, integrated intent detection for API data retrieval.
- **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
  Discovery Day — *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 tenserflow.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.
- **Model United Nations (MUN)** — London, United Kingdom
  Delegate — *Aug 2018 - Jun 2021*
  - Attended THIMUN, one of the world's largest MUN conferences in the Hague, representing South Sudan and Iran.
  - Introduced blockchain technology at Alconbury MUN, resulting in the passing of my resolution by majority vote.

Additional Information

- **Languages:** English (Fluent), Hindi (Native)
- **Coding Languages:** Proficient in Python and experienced in SQL, R, HTML, CSS, and LaTeX
- **Certifications:** CS50x - Introduction to Computer Science | Harvard University
- **Interests:** Scuba Diving (PADI Certified Advanced Open Water Diver), Cross Country.