Dhruv Sharma

GitHub: https://github.com/DhruvSkyy
LinkedIn: https://www.linkedin.com/in/dhruvsharma-ucl/

Email: dhruv.sharma.22@ucl.ac.uk
Mobile: +44-7480-476893
Website: https://www.dhruvs.com/

EDUCATION

University of Cambridge — Cambridge, United Kingdom
MPhil in Scientific Computing (Expected) — *Oct 2025 – Sep 2026*
Specialising in high-performance computing, machine learning, GPU programming, and advanced C++ for computational modelling.

University College London (UCL) — London, United Kingdom
BSc Chemistry with Mathematics; Grade: Predicted First-Class Honours — *Sep 2022 - Jun 2025*
Courses: *Algorithms and Data Structures, Scientific Programming, Computational Chemistry, Mathematics for Physics and Astronomy*
Activities and Societies: *Quant Society, Asset Management Society, Scuba Diving Society, Surfing Society, Brazilian Jiu-Jitsu Society*

EXPERIENCE

Microsoft — London/ Edinburgh, United Kingdom
Software Engineer Intern, Azure for Operators — *Jul 2024 - Sep 2024*
- Used Ceph, an open-source package to manage syncing data between voicemail servers scaling to millions of users.
- Wrote robust, error-handled code to allow for an outage-less upgrade of servers for customers with five nines uptime.
- Ensured code could easily be debugged with well-written documentation and logs for support teams to aid customers.
- Deployed Linux VMs, automated processes with bash scripts, monitored and managed network services/APIs.
- Gained skills in working with open source communities, debugging poorly documented functions in large codebases.
- Replaced Ansible with Python scripts, boosting command speed by up to 1000x, enhancing support team efficiency.
- Developed unit-tested Java code in a large codebase, managing endpoint selection for requests in a multithreaded server.
- Developed a Microsoft 365 Copilot extension for researchers to accurately discover papers via the Semantic Scholar API.

Sainsbury Wellcome Centre and Gatsby Computational Neuroscience Unit — London, United Kingdom
Research Software Engineer, Neuroinformatics Unit — *Sep 2023 - Mar 2024*
- Helped develop Movement, an open-source Python package for the kinematic analysis of animal body movements.
- Wrote high-quality, object-oriented, unit-tested code for the I/O of various data formats and underwent code reviews.
- Utilized strong CI/CD practices to facilitate open-source collaboration and published the code for open-source use.
- Published as a coauthor in the proceedings of Measuring Behavior 2024: https://doi.org/10.6084/m9.figshare.25897855.

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.

PROJECTS

Accessible Flappy Bird - Pose Detection & Voice Recognition
Morgan Stanley Code to Give Hackathon — *October 2023*
- Worked in a team to use on-the-edge ML algorithms for keyword detection for voice controls, and pose detection to track head movement to create an accessible flappy bird for Children's Hospices Across Scotland (CHAS).

Spatiotemporal Analysis and Prediction of Crime in Philadelphia
Citadel Europe Regional Datathon — *April 2023*
- Conducted a spatiotemporal analysis of traffic stops and crime in Philadelphia to determine police efficiency in locating crime hotspots using R. Trained a neural network from TensorFlow to predict the type and time of crimes in hotspots.

Deep Learning Model to Measure User Attention
Hackathon Submission — *March 2023*
- Worked in a team to develop an application which detects users' attention during video calls using a deep learning model trained with TensorFlow and plots a graph displaying how attention varied over the call.

ADDITIONAL INFORMATION

- **Coding Languages:** Proficient in Python, experienced in Bash, SQL, R, C, Java and LaTeX.
- **Interests:** Scuba Diving (PADI Certified Advanced Open Water Diver), Surfing, Brazilian Jiu-Jitsu, Cycling
- **Spring Weeks:** G-Research Coding Challenge (Winning Team), Susquehanna International Group, WTW, Schroders.