

Shubhangi Sharma

Founding Engineer at Orion | Oxford MFOCS | MInstP

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🎓 Education

Msc Mathematics and Foundations of Computer Science, University of Oxford 2023 – 2024 | Oxford, United Kingdom
Thesis on 'Analysing and Advancing Automated Immune Biomarker Detection'.
Ambassador for the Mathematical Institute and my college, Lady Margaret Hall.
Modules: **Geometric Deep Learning, Graph Theory, Computational Complexity, Algorithmic Foundations of Collective Decision Making, Quantum Information, Quantum Processes and Computation, and Computational Game Theory.**

BSc (Honours) in Computer Science, FLAME University Sep 2020 – May 2023
CGPA of 8.53 out of 10, awarded the Dean's Roll of Honour.

💼 Work Experience

Founding Engineer, Torus (YC S26) Present | London
Founding Engineer, Orion Aug 2025 | London, United Kingdom
Previously: **Data & ML Engineer** (Nov 2024 – Aug 2025); **Data Engineer (Part-time)** (Apr 2024 – Nov 2024)

- Built and scaled the company's core data infrastructure to ingest and process high-volume, multi-source intelligence streams.
- **Managed a team** of two in Data and ML.
- Partnered closely with the CTO and operations leadership on architectural decisions and translating operational requirements into production systems.
- Engineered geospatial intelligence systems using **H3 indexing** and **spatiotemporal analytics**, combining location precision, confidence weighting, and event-level impact signals for site-level risk assessment.
- Constructed and productionized **machine learning pipelines**, including NLP flows, for anomaly detection, data validation, and intelligent filtering.
- Designed and operated **multi-stage data pipelines** spanning ingestion, normalization, enrichment, and classification.
- Developed web crawlers and APIs in **Python**, deploying across **AWS** and **GCP**.
- Built backend services in **Python** and **Golang** to support real-time intelligence processing.
- Developed frontend dashboards in **Vue.js**.

Machine Learning Engineering Intern, Natter Jun 2023 – Sep 2023 | London, United Kingdom

- Collected data through mechanisms like **web scraping** and text extraction from PDFs from various online sources like social media and news sites.
- Constructed, compared, and fine-tuned various machine learning models on **Python**.
- Specifically, engineered custom machine learning models for:
 - Detecting bullying on social media.
 - Identifying the presence of any mental distress in a given piece of text.
 - Spotting advertising/spammy content.
 - Analyzing the sentiment of each post on the platform.
- Assisted the company with scaling algorithms like building a user-based matching algorithm to recommend connections on the platform based on mutual interests.
- Effectively communicated insights through extensive documentation and frequent presentations to diverse stakeholders.

Data Analyst and Researcher, Centre for Knowledge Alternatives Oct 2021 – Apr 2022 | Pune, India

- Built a comprehensive cultural mapping project of Kolhapur district, integral to the Discover India Project.
- Extracted and analyzed government data, employing **Tableau** for graphical data representation.
- Authored a comprehensive sector-wise report on the Kolhapur district.

📁 Research Experience

BlueDot AI Safety May 2026 – Present
• AI Safety research ongoing with BlueDot Impact.

ML Researcher Sep 2023 – Sep 2023
• Researched and programmed generative and reconstructive applications of Variational Auto-encoders (VAEs) and associated algorithms.

Improved JAYA algorithm for the identification of protein functions

Jan 2022 – Aug 2022

Research Intern to Prof. Jayaraman Valadi.

- Presented the poster at the Indian Conference on Bioinformatics 2022, at VFSTR (Vignan's Foundation for Science, Technology and Research) on 31st October 2022.
- Coded variations of an existing **feature selection algorithm** (the JAYA algorithm) in **Python** by synergising it with the **genetic algorithm** steps of crossover and mutation and changing parameters.
- Ran and **tested** the new algorithms with three datasets comprising of protein functions.
- One of the modified algorithms resulted in the **highest accuracy at 96%**.

Motivations behind Mergers, Research Intern to Prof. Swapnajit Chakraborty.

Nov 2021 – Sep 2024

- Paper 'Decoding Flipkart-Walmart Merger: An Empirical Analysis of News using Theme Extraction, Sentiment Mining, for Indian M&A Insights' won best paper at ICCUBE2025.
- Created a **web scraper in Python** for news data on the Flipkart-Walmart merger.
- Pre-processed news data and applied **machine learning models** to obtain the qualitative reasons for mergers and acquisitions (using **Spacy, NLTK, Gensim, Textblob**).
- Verified results through **extensive literature review**.

Machine Learning techniques to estimate Integrated Water Vapour from GNSS observations

Sep 2022 – 2023

Honours Thesis Project, Advised by Prof. Kaushik Gopalan.

- Conducted literature review, developed hypotheses, pre-processed the data, and began initial analysis on Python (using **Numpy and Pandas**).
- Programmed **ML regression models** to estimate the water vapour present in the atmosphere.
- Compared these models against traditional and novel methods that use linear equations comprising of temperature, pressure, and GPS (Global Positioning System) signals.
- Visualised the results by creating plots and tables using **matplotlib**.

Explainable AI: Decoding protein sequences, Research Intern to Prof. Jayaraman Valadi.

Oct 2022 – 2023

- Wrote functions to employ WOE (weight of evidence) binning using **Python**.

Novel Technique to Derive Cloud Information, Research Intern to Prof. Kaushik Gopalan.

Aug 2021 – Jan 2022

- Pre-processed, thresholded, and adjusted radiation data to separate clear-sky and cloudy pixels in each half-hourly image derived by the INSAT-3D satellite using **Numpy, Scipy, PyHDF, and NetCDF**.
- Adjusted pixels with anomalies.
- Graphed 20+ cloud incidence results over different parts of the country using **matplotlib**.

Awards

Full Member of the Institute of Physics (MInstP), Issued by Institute of Physics

Feb 2026

Elected member of the professional body and learned society for physics in the UK and Ireland, working to advance physics education, research and applications.

Best Paper Award, 9th International Conference on Computing, Communication, Control & Automation (IEEE ICCUBE-2025)

Aug 2025

Co-authored a paper "Decoding Flipkart-Walmart Merger: An Empirical Analysis of News using Theme Extraction, Sentiment Mining for Indian M&A Insights" which was selected for the "Best Paper Award" at the IEEE ICCUBE 2025. The conference received ~1240 submissions, with ~220 selected for presentation and SCOPUS publication.

Dean's Roll of Honour, FLAME University

Dean's Roll of Honour for Outstanding Performance in year 1 in UGLE, Rank 41, during Semester I and Rank 24, during Semester II. Rank 3 in years 2&3 in BSc Hons CS.

Programming Projects

IOT Weather Bot, Using C++ and ThingSpeak.

- Created the circuit design for a weather bot that analyses the temperature and humidity of the surrounding region.
- Built and programmed the bot using C++, a microcontroller, WiFi module, and sensors.
- Implemented control methods like turning on/off fans, alarms and colour-coordinated lights if the temperature or humidity fell outside a user-defined threshold.
- Added web functionality so the user can see the weather status of the area where the bot is located online (updates every 15 minutes).

Taylor Swift Recommendation System, Using R and libraries (ggplot, dplyr, tidyr, shiny, purrr).

Developed an interactive interface to:

- Recommend Taylor Swift songs based on current song preferences.
- Visually display and analyse the musical features of these recommendations through different plots.

Cipher Program, Using Python (and Numpy)

- Built an encryptor to encrypt text files through 5 layers of complexity (including linear transformations and applications of mathematical functions) and generate a key.
- Created a corresponding decryption tool to use the key to accept and decrypt only files belonging to the cipher.

Volunteer Work

Currently:

2025 – Present | London

- STEM Ambassador at **InnovateHer**
- Science Communicator at "**I'm a... Programme**" for Computer Science and Mathematics
- Contributor for **HuggingScience** by HuggingFace
- Contributor for **MLOpsCommunity**, London

At the University of Oxford:

2023 – 2024 | University of Oxford

- IT Officer, Oxford Femtech Society
- Academic Trinity Rep, MCR (Middle Common Room), Lady Margaret Hall
- Ambassador, Mathematical Institute
- College Ambassador, Lady Margaret Hall
- Graduate Outreach Ambassador

At FLAME University:

2020 – 2023 | FLAME University

- Student Council Vice-Captain
- Peer Mentor
- Peer Tutor at the Quant Centre
- Co-Founder and President at FLAME University's technology club, Dotslash
- Coordinator at FLAME University Yoga Club
- Treasurer at FLAME University Billiards Club
- FLAME Entrepreneurship Lab Marketing Team Lead
- FLAME Kurukshetra Tech & IT Coordinator
- FLAME Kurukshetra Tech & IT Team member
- FLAME FirstCut Events and Registration Committee member

Before that:

2020 – 2022 | India

- Blogging Volunteer, Swapnopuron Welfare Society
- Teaching & Fundraising Volunteer, iVolunteer
- Writer for 'GenZ Writes.'

Prior Experience

Founder, *PrintedCraft*

Jul 2019 – Jul 2021 | Bangalore, India

Founded to cater to the growing need for personalisation. Part of proceeds went towards various charitable causes.

- Modified the **CMS (content management system)** by customising the style rules and adding new features.
- Built **python connector** to product database hosted on cloud to update promotions on products in real time.
- Integrated the site with **Google and Facebook Ads** and fine-tuned it to show up on Google's first page.
- Created 100+ product designs.
- Collaborated with designers and suppliers across the country.

Co-Founder, *UnisphereCo*

Jun 2020 – Jun 2021 | Hyderabad, India

Created an online student-run platform to provide resources for the undergraduate college application process through a series of interactive online sessions, blogs, and other programmes.

- Evaluated various CMS options, and identified the **plugins and themes** for the website.
- Ideated and Implemented the one-on-one mentoring feature on the website.
- Enlisted a network of mentors from 50+ prestigious universities all around the globe.
- Organised interactive sessions on undergraduate admissions with 200+ members in attendance.