

# Shubhangi Sharma

Founding Engineer at Orion | Oxford MFoCS | MInstP

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📍 London, United Kingdom

## 🎓 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**, *Orion* Aug 2025 – Present | 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.
- 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

**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 ICCUBEA2025.
- 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

Sep 2022 – 2023

#### **GNSS observations**, *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,

Oct 2022 – 2023

#### *Research Intern to Prof. Jayaraman Valadi.*

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

### Novel Technique to Derive Cloud Information,

Aug 2021 – Jan 2022

#### *Research Intern to Prof. Kaushik Gopalan.*

- 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,*

Aug 2025

#### *Control & Automation (IEEE ICCUBEA-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 ICCUBEA 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, tidy, 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

### 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.