Shreya Chakravorty

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Professional Summary

I am a Data Science postgraduate student at the University of Surrey with a background in Computer Science (MComp Hons, Newcastle University). I am experienced in full stack development, including a solid foundation in front and back-end technologies. I have also built secure ML/NLP pipelines and networking systems, with a focus on scalable design. My projects highlight these skills, equipping me to contribute and tackle large scale challenges with BlackRock's Technology and Aladdin Engineering teams.

Education

University of Surrey | MSc Data Science with Professional Postgraduate Year — *Sept 2025 – Sept 2027*

Newcastle University | MComp Honours Computer Science – First Class — *Sept 2021 – June 2025*

Experience

Software Developer | PHP, Laravel — *Dec 2024 - Feb 2025*

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- Conducted security analysis of codebase, identifying 3+ vulnerabilities regarding input validation, database security, CSRF security, and documenting manual and automated tests to address issues raised and to improve data quality and integrity.
- Troubleshot critical development environmental errors (e.g., unresolved table column issues) through research and systematic testing, advocating team collaboration to address systemic code flaws.

Lab Support Assistant (LSA) — *Sept 2024 - June 2025*

Teaching Assistant

- Completed ILTHE training and used teaching methods to support stage 1 students in areas such as databases and system architecture.
- Translated complex theoretical concepts into explanations for students, improving comprehension and confidence in coursework.

Projects

Streaming Platforms Comparison Dash Website | Python, Dash, Plotly, Pandas, NumPy — *March 2025 – May 2025*

Fourth Year, Dissertation Project

- Built 4 dashboards within an interactive dash web that compares library size, genre, ratings, and content recency across Netflix, Prime Video, Hulu, and Disney+.
- Created a data pipeline that merged Kaggle + IMDb data, achieved > 60 % catalogue coverage across critical fields, developed linked visualisations with this data that updates in real time with interaction (sliders, tooltips, and drop-down menus).
- Led usability testing with 11 participants, 54.5% rated the tool 5/5 overall, translated analytics into insights and advice for end users.

Fake News Detection System | Python, Django — *Feb 2025 – March 2025*

Fourth Year, Group Project

- Co-led an 8 person team to build a misinformation detection system comprising a text collection and classification pipeline (TF-IDF and Logistic Regression) trained on ~70k labelled articles, with results hashed to an Ethereum smart contract for tamper resistant storage. Reported accuracy, precision, recall, and a confusion matrix to evidence model quality.
- Implemented security and data integrity controls, including regex and whitelist based input sanitisation with length limits and rate-limiting, HTTPS/TLS with HSTS and secure cookies, Google OAuth2, CSRF protection, and encrypted audit logging.
- Deployed a scalable, multi-container stack with Docker Compose (Nginx reverse proxy, Gunicorn app workers, PostgreSQL with persistent volume and .env secrets) and validated performance using scripted load tests.

Azure Kubernetes Deployment & Observability | Kubernetes, Docker (Azure, Linux/Bash) — *Oct 2024 – Dec 2024*

Fourth Year, Individual Project

- Provisioned and operated a Kubernetes cluster on Azure using CLI only (kubectl + Bash). Containerised a Java service with Docker, exposed it via NodePort and restricted the Kubernetes Dashboard with RBAC.
- Implemented observability with a metrics-server DaemonSet, Prometheus scraping, and Grafana dashboards showing live CPU, memory, and load-generator latency to verify behaviour under stress.
- Built a load testing tool, packaged and pushed to a private container registry, executed stress runs, and analysed throughput, error rate, and response times to inform scaling and resource configuration.

Budget Management System | Python, Flask, Jinja2, SQLite, HTML, CSS, JavaScript — *Feb 2024 – June 2024*

Third Year, Dissertation Project

- Created a budget management website with user authentication, personalised budget calculations, tips, and quizzes.
- Used a Flask framework with routes and HTML templates that were rendered with Jinja2, applied CSS styles for layout and presentation, used SQLAlchemy to manage database interactions.
- Incorporated dynamic visualisations (line and pie charts) using chart.js to display budget and income/expense trends.

Skills

- Programming Languages: Python, Java, Go, C, PHP, JavaScript
- Data Visualisation / Analytics: Dash, Plotly, Altair, Matplotlib
- DevOps: Docker, Kubernetes, Azure VMs, Prometheus, Grafana
- Web & Backend Frameworks: Flask, Laravel, Hibernate, Jinja2
- Databases & ORMs: MySQL, SQLite, MongoDB (PyMongo)