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 have hands on experience in building data pipelines, and I have transformed complex datasets into actionable performance insights using Python, Plotly, and SQL. Through my MSc, I am deepening my skills in statistical modelling, data visualisation, and analytical tools such as Power BI and MATLAB. I am eager to contribute to Cummins Inc. by developing data driven solutions, improving product performance dashboards, and collaborating with engineers to support data quality and design validation.

Education

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

- Currently undertaking postgraduate study focused on machine learning, statistical data science, and data engineering.

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

- Relevant Modules: Machine Learning, Complex Data Visualisation, Project and Dissertation for MComp.

Experience

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

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- Conducted codebase analysis where 3+ vulnerabilities were identified related to data handling and database security, documented manual and automated tests to address issues raised, thus improving system reliability and data integrity.
- Investigated root causes of environment errors (e.g., unresolved table column issues) through debugging and team collaboration.

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

Newcastle University

- Used ILTHE certification to teach and 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.

Complex Microbiome Data Visualisation | Python, Altair, Pandas, JavaScript *Jan 2025 – Feb 2025*

Fourth Year, Individual Project

- Developed an interactive dashboard visualising microbial abundance using coordinated views (bar chart, line graph, geographic mapping), enabling comparison of high-dimensional data from the Tara Ocean project.
- Enabled filtering by taxonomic level, ocean depth, and layer of origin, reflected on sources of uncertainty in data representation.

Comprehensive ML Analysis | Python (Scikit-learn), Pandas, NumPy, Matplotlib *Nov 2024 - Dec 2024*

Fourth Year, Individual Project

- Performed data exploration, feature engineering, and hyperparameter tuning using GridSearchCV and cross-validation.
- Built ML pipelines across problems including classification (Logistic Regression, XGBoost), regression (Random Forest, SVR), NLP (text preprocessing, TF-IDF feature extraction), and evaluated models using classification metrics and NLP methods.

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)

Achievements

- Completed the Data Innovation Bootcamp programme from the National Innovation Centre Data, Newcastle.
- Completed Introduction to Learning and Teaching in Higher Education (ILTHE).
- Received Subject Commendation Award for Computer Science in Kuwait.