

Deborah Adekore-Otu

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Personal Profile

Final year student studying BSc. Mathematics & Computer Science at Nottingham Trent University, with strong foundations in data analytics, statistics, machine learning and software development. Experienced in designing relational databases, writing SQL to solve business problems, analysing large datasets with Python, and developing data-driven solutions through academic and industry-based projects. Skilled in translating complex data into meaningful insights through statistical analysis, dashboards and clear communication, with experience applying cloud technologies, AI-assisted workflows and modern software engineering practices. Recognised for effective teamwork, a proactive approach to learning with the ability to adapt and contribute to dynamic settings whilst growing my professional skills in stakeholder communication.

Education

Nottingham Trent University, 3rd Year 2023 - 2027

BSc. Mathematics and Computer Science (FY)

Key Modules: Probability & Statistical Inference, Data Analysis, Foundations of AI/Machine Learning, Software Design + Implementation, Systems Software

City of Wolverhampton College 2021 – 2023

BTEC: Level 3 Applied Science (D*D*D*) in Biology, Chemistry and Physics

Joseph Leckie Academy/Nottingham High Pavement 2019 – 2021

GCSE: 99655544 including Mathematics (5) and English Language (6)

Skills

- **Programming & Data Analysis:** Python (Pandas, NumPy, Matplotlib, Seaborn, Scikit Learn), R, C++, Java
- **Data Analytics & Machine Learning:** Data cleaning, Exploratory Data Analysis (EDA), Statistical Analysis, Machine Learning Modelling, Data Visualisation, Predictive Modelling
- **Databases:** SQL, SQLite, Relational Database Design, Database Architecture, Data Modelling, Query Development
- **Tools & Technologies:** GitHub & Git, Jupyter Notebook, Docker, Docker Compose, VS Code, RStudio, Google Colab.

Projects

SQL & DATABASE ARCHITECTURE EXTERNSHIP WITH BREAKING GAMES July 2026 – Aug 2026

- Design and iteratively refine an analytics database from 6 disconnected CSV, transforming raw data into a structured relational database using dimension tables, summary tables, views, primary keys, foreign keys, and SQL JOINS.
- Analyse customer behaviour, product performance, marketing attribution, and cart abandonment by writing SQL queries to answer business questions, validate findings, and generate actionable insights for commercial decision-making.
- Clean and standardise inconsistent marketing channel data, identify bot activity affecting conversion metrics, and calculate key performance indicators to support evidence-based recommendations.
- Collaborate effectively with AI tools by providing contextual prompts, critically evaluating outputs, verifying SQL queries and analytical results, and refining solutions through iterative problem solving.
- Develop an interactive HTML dashboard that communicates analytical findings through clear data visualisations and supports recommendations on marketing investment, product restocking, and customer conversion strategies.

AEROGRIID ENGINEERING DATA PROJECT May 2026

- Analysed and processed engineering datasets as part of the Bright Network's IEUK virtual internship experience.
- Built data pipeline using Python (Pandas) and Docker, applying cloud architecture principles to deliver findings.
- Produced stakeholder facing output demonstrating data-backed recommendations.

WAREHOUSE INVENTORY MANAGEMENT SYSTEM Sept 2025 – Apr 2026

- Designing and developing a C++ console app for warehouse stock management, applying OOP programming principles and utilising the C++ STL library for efficient data structures, searching and sorting algorithms.
- Implementing file-based data storage and retrieval to handle structured data and visualisations for inventory, orders and employee records.
- Maintaining the application using Git & GitHub, regularly committing progress to a dedicated university repository for version control.
- Producing technical documentation including UML diagrams, testing plan with unit and acceptance tests and user manuals.

CLASSIFICATION & CLUSTERING PROJECT (PYTHON) Jan 2026 – Mar 2026

- Analysing the 2022 Kaggle Data Science Survey (23,997 responses) to explore how factors like job role, education and coding experience relate to income levels.
- Building and comparing machine learning models (KNN, Decision Trees, Logistic Regression) to predict whether respondents fall into low- or high-income groups.
- Performing clustering analysis to group respondents by similarities and identify distinct profiles within the data.
- Implementing the full data science workflow in Python (Pandas, Scikit-learn, Seaborn, NumPy, Matplotlib) within Jupyter Notebooks, from data cleaning to model evaluation.

CLOUD LOAD BALANCER & DISTRIBUTED SYSTEM SIMULATION (JAVA/DOCKER) Oct 2025 – Feb 2026

- Developing a containerised cloud simulation with a custom load balancer, JavaFX GUI, and integrating SQLite/MySQL databases.
- Using Docker Compose to orchestrate services and applied scheduling algorithms to manage traffic between file storage nodes.

DATA ANALYSIS OF GLOBAL GDP & HUMAN CAPITAL INDEX (MINITAB) Jan 2025 – Mar 2025

- Collected and analysed GDP per capita and HCI data from the World Bank Open Data using Minitab for analysis.

- Conducted descriptive statistics, ANOVA, Correlation and Linear Regression using Minitab to evaluate the relationship between these two variables (Linear Regression)
- Visualised findings and produced a concise and analytical report.

SYSTEMS AND ANALYSIS AND DESIGN

Dec 2024 – Jun 2025

- Led and developed a system to manage customer bookings, vendor services, job scheduling, payments and promotions while providing administrative oversight and reporting capabilities.
- Collaborated with other students to implement and design a solution, create use cases, process flow and data flow diagrams and utilise agile methodology for phased project execution.
- Produced a detailed proposal, including database and design within the set budget and timeline showcasing a variety of soft skills including strong project management and understanding of technical concepts.

Work Experience

LATIMER TUITION, TUTOR

Jan 2025 - date

- Providing one-on-one tutoring in Key Stage 2 & 3, GCSE level in Maths, Sciences and Computer Science to improve student understanding of core technical concepts.
- Simplifying complex STEM concepts (e.g algebra, statistics, basic programming) to suit varied learning styles and disabilities.
- Reinforcing students problem-solving techniques through guided practice and exam-style questions.
- Achieved 4-star ratings from students and parents for delivering effective tuition and understanding of technical concepts.
- 97% client retention rate throughout tutoring career

UNITEMPS, SURVEY ASSISTANT

Sep 2024 – Jun 2025

- Collected accurate campus utilisation data across various campus buildings at NTU to aid in resource planning.
- Gathered data on room occupancy and activities to help the university optimise space and communicating with supervisors to report progress, address challenges and ensure data collection.
- Maintained 90% accuracy in data entry, ensuring integrity of the datasets thereby receiving positive feedback from supervisors for maintaining consistent communication and attention to detail in completing the tasks.

LIFEGATE OUTREACH CENTRE, SEASONAL ACTIVITIES CO-ORDINATOR

Aug 2024 - date

- Led and co-ordinated a series of activities for children at a council funded summer program ensuring all activities were well-organised, engaging and safe for all children including those with special needs.
- Co-ordinated 10 sports activities for over 50 children ensuring safety standards were met whilst providing tailored support for children with special needs and creating and maintaining a positive atmosphere.
- Achieved a 90% satisfaction rate in post-camp surveys.
- Successfully ensured 80% participation from children with special needs enhancing the program's inclusivity.

Responsibilities and Achievements

COURSE REPRESENTATIVE: MATHS AND COMPUTER SCIENCE

Oct 2025 – Jun 2026

Representative for the Maths & CS course liaising between students and academic staff.

- Gathering and communicating student feedback to improve our course and student experience.

MEMBER OF THE AI/ROBOTICS SOCIETY AT NTU

Oct 2025 – date

- Member of the new society at my university, participating in weekly coding sessions relating to robotics, learning from other students in their respective fields.
- Learning Arduino and robotics fundamentals through weekly society sessions.

MEMBER OF THE INSTITUTE OF MATHEMATICS AND ITS APPLICATIONS (IMA)

Oct 2024 – date

- Accepted as a member of a professional body for advancing mathematical knowledge and its applications, thereby granting access to valuable resources and opportunities to network with likeminded individuals.
- Participating in enlightening discussions in Maths and how it impacts society.

BARCLAYS FLIP THE SCRIPT CHALLENGE

Nov 2024

- Participated in the Barclays Flip the Script Challenge designed to mimic real life scenarios aimed at challenging perceptions in the tech and finance industry by completing Python based challenges that required identifying problems and developing solutions.
- Applied programming knowledge in Python gained through projects and independent study to ensure accuracy.
- Successfully completed the challenge, demonstrating technical proficiency in Python thereby reinforcing my confidence in applying my technical skills to real-world scenarios.

GEORGE SPENCER ACADEMY, TEACHING INTERN

June 2025

- Provided academic support to students at Key Stage 3, GCSE and A-Levels in Mathematics for 3 weeks.
- Collaborated with other interns to deliver teaching sessions, present ideas and receive feedback.