Tanishq Sharma

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SUMMARY

MSc Artificial Intelligence student at **Imperial College London** with 4 years of hands-on Data Engineering experience. Pivoting to ML Engineering to apply advanced algorithmic concepts to data-intensive challenges, with a focus on scalable, end-to-end deployment

EDUCATION

Imperial College London   London, UK
Masters in Artificial Intelligence, Department of Computing   *Sep 2025 – Sep 2026*
Modules: Deep Learning, Reinforcement Learning, Mathematics for Machine Learning, Natural Language Processing, Software Engineering for ML Systems

BITS Pilani   Goa, India
Bachelor's in Chemical Engineering   *Aug 2015 – Aug 2019*

EXPERIENCE

Data Engineer 2   Mar 2021 – Sep 2025
Apple   *Bengaluru, India*

- Architected and optimized a **Snowflake** backend for an **LLM application** pilot used by Apple advisors for customer support, achieving sub-2 second query responses on **10+ billion** records through efficient data modelling
- Deployed a chat summarisation service on **Streamlit** using Google's **Flan T5** model, enabling analysis of customer-advisor interactions and reducing issue detection time by **55%**
- Engineered a **GPU-accelerated** ML pipeline on **Apple Cloud** to cut inference time by **2.5x**, mapping customer feedback and queries into a unified taxonomy to improve content gap identification and insights
- Established a machine learning framework for **daily and weekly monitoring** of key business intelligence metrics, leading to the detection of anomalies with a **85%** success rate and accelerating issue response times by **60%**
- Automated PR testing workflows via a **CI/CD pipeline** on GitHub, ensuring early bug detection, reducing manual QA effort and cutting average review-to-merge time by **50%**
- Developed a scalable web scraping pipeline using **Python** and **multi-threading** to analyse image localization issues, reducing computation time by **5x**
- Migrated **200+ workflows** from a cron-based system to a cloud-based **Apache Airflow** setup with centralized credential management, leading to a 52% reduction in operational costs
- Formulated a capacity planning framework using an internal **API** for the Content Operations team, improving project planning and reducing delivery backlogs by **75%**
- Designed scalable data models in **Snowflake** to transform raw iOS app customer journey data into business-consumable formats, enabling insights from **2B+ user visits**

Process Data Engineer   Aug 2019 – Mar 2021
Reliance Industries Ltd   *Gujarat, India*

- Built an in-house motor fault prediction software prototype in collaboration with reliability engineering team with estimated savings of **$50K annually** by reducing third-party dependency and enabling predictive maintenance
- Analysed plant data & parameter trends for uninterrupted operation of **9.28 KTPD** Alkylation Unit

Business Analyst Intern   Jan 2019 – Jun 2019
InMobi Technology Services   *Bengaluru, India*

- Implemented strategies which increased ad campaigns revenues by **$5000/day**
- Delivered weekly business forecasts and identified upcoming opportunities for existing and new accounts the South East Asia Region valued **$50K per month**

TECHNICAL SKILLS

Languages & Programming: Python, SQL, Object-Oriented Programming (OOP), Data Structures & Algorithms
Data Engineering: Snowflake, Apache Airflow, Jenkins, Tableau
Cloud & Infrastructure: AWS (S3, EC2), Docker, Terraform
Developer Tools: Git, GitLab
Libraries: PyTorch, TensorFlow, NumPy, Pandas, Matplotlib, scikit-learn

Technical Projects

Neural Network Implementation & Analysis on Challenging Datasets Oct 2026 – Nov 2026
Imperial College London *London, UK*
- Devised and trained a Multi-Layer Perceptron (MLP) using TensorFlow and Keras to solve the "Kryptonite-2.0" binary classification challenge, refuting claims that the dataset was unsolvable by standard ML models
- Tailored a custom architecture with 80 hidden units and tanh activation functions to specifically capture complex, non-linear decision boundaries that linear models and GPT embeddings failed to detect
- Attained 93% performance across all key metrics (Accuracy, Precision, Recall, F1 Score) on high-dimensional feature sets, surpassing the "Acceptable Task Accuracy" benchmarks defined in the problem statement
- Enforced a reproducible training pipeline using deterministic seeding, StandardScaler pre-processing to prevent data leakage, and strict train/validation/test splitting
- Quantified model efficiency via a comparative review, highlighting the negligible carbon and water footprint of the custom MLP compared to Large Language Models (LLMs) in alignment with AI environmental standards

Neural Networks From Scratch Oct 2026 – Nov 2026
Imperial College London *London, UK*
- Programmed a multilayer perceptron (MLP) from first principles using Python/NumPy, manually coding the forward pass, backpropagation, and gradient-based optimization without deep-learning frameworks
- Benchmarked the custom implementation against a PyTorch equivalent, comparing outputs, gradients, and training behavior to validate mathematical correctness and convergence
- Deconstructed the internal mechanics of automatic differentiation libraries, translating low-level mathematical operations into high-level deep-learning framework logic to solidify understanding of computational graphs and backpropagation

Shortest Path in the London Tube Network Oct 2026 – Oct 2026
Imperial College London *London, UK*
- Computed optimal travel routes across the London Underground network by applying Dijkstra's shortest path algorithm in Python
- Architected a modular OOP system (TubeMap, NeighbourGraphBuilder, PathFinder) to ensure scalable network modeling and code reusability
- Ingested and transformed complex JSON dataset containing tube lines, stations, and connections into graph structures using only the Python Standard Library

Leadership Experience

Apple Jan 2024 - Jan 2025
Acting Team Lead *Bengaluru, India*
- Led weekly meetings and used Radar for project management, overseeing balanced workload distribution among a team of 15 contractors and ensuring timely delivery of data engineering projects

National Metallurgist Conference Oct 2017 - Nov 2017
Event Manager *Goa, India*
- Managed presentations for 2000+ delegates at a prestigious annual conference organized by the Indian Institute of Metals

Quark: Annual Tech Fest at BITS Pilani Mar 2016 - Mar 2016
Crew member *Goa, India*
- Volunteered for "Red", a CSR initiative of Quark supporting blood donation
- Coordinated and organized a camp in 7 cities and managed 200+ blood donors

Certifications

- Machine Learning Specialization by Andrew Ng
- Python Specialization by Charles Severence
- Advanced SQL - Logical Query Processing