

NIKHIL RANA

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Graduating Sept 2026 | Full UK work rights via Graduate visa until late 2028

PROFESSIONAL SUMMARY

MSc Artificial Intelligence graduate (University of West London, Sept 2026) with a quantitative and statistical foundation, targeting graduate and associate roles in fintech spanning data analytics, financial machine learning, and responsible AI. Built and empirically evaluated a full RAG pipeline against UK Companies House iXBRL filings, doubling answer accuracy (45% to 92%) through tag-aware retrieval, a statistically significant gain replicated on a second model, with a live public demo. Gained direct exposure to regulatory financial data through the FRC Hackathon, and hands-on experience in customer analytics and churn modelling at Nepal's largest ISP.

TECHNICAL SKILLS

Programming: Python (Pandas, NumPy, Scikit-learn, SciPy, PyTorch), SQL, C++ (Academic), Java (Academic)
AI & Quant: RAG, LLM Evaluation, Hypothesis Testing, K-Means Clustering, Monte Carlo Simulation, NLP, Regression
Tools & Domain: Git, iXBRL/XBRL Financial Reporting, Jupyter, Linux, SelfCheckGPT, SPSS, Tableau

EDUCATION & RESEARCH

MSc Artificial Intelligence | *University of West London, UK* Sept 2025 – Sept 2026 (Expected)

Current Average: 70% (Semester 1 & 2) | Distinction level under UK grading (70%+ = Distinction)

Dissertation: “Detecting and Mitigating Hallucinations in LLMs for UK iXBRL Financial Reporting” [Live Demo](#)

- Built a direct iXBRL parser and structured fact store (5,605 numeric + 1,501 narrative facts across 12 UK statutory filings) and a 102-question gold-answer benchmark; evaluated three experimental conditions across two LLMs.
- Tag-aware retrieval nearly doubled answer accuracy, from **45.1% to 92.2%** (+47.1pp, 95% CI [37.3, 56.9]), a statistically significant improvement confirmed across 1,000 bootstrap resamples. GPT-5.6 Terra replicated the gain (43.1%→84.3%). Also diagnosed why SelfCheckGPT-style detection caught none of the baseline's errors on structured financial data.
- Deployed the pipeline publicly on Render (Python, SQLite fact store, Claude and OpenAI APIs): users upload any UK company filing, view its extracted XBRL tags, and query it via Claude Sonnet or GPT, enabling side by side comparison of hallucination behaviour across models.
- Identified by academic supervisor as of publishable quality; preparing findings for submission to a peer-reviewed venue.
- Modules:** Big Data Analytics, Deep Learning, Machine Learning, Responsible AI.

BSc Computer Science & Information Technology | *Tribhuvan University, Nepal* 2020 – 2024

Grade: 72.43% (UK equivalent: 2:1 Upper Second Class)

Modules: Statistics & Probability, Numerical Methods, Simulation & Modelling, Data Mining.

PROFESSIONAL EXPERIENCE

Data Analyst Intern | *Marketing Department, WorldLink Communications Limited, Nepal* Mar 2024 – Jun 2024

- Delivered data-driven marketing analytics, including customer segmentation, churn-risk analysis, competitive mapping, and campaign-performance evaluation, at Nepal's largest ISP (900k+ customers) during a 3-month full-time placement.
- Built two end-to-end K-Means clustering pipelines in Python (Pandas, Scikit-learn, Matplotlib/Seaborn): a 4-profile customer segmentation model and a 3-cluster churn-risk model, using the Elbow Method for cluster selection, PCA for visualisation, and unit/system tests to validate the pipeline.
- Analysed a 1,600-respondent, 7-region ISP customer survey in SPSS, producing region-based frequency and distribution reports.
- Presented segmentation, churn, and competitive-mapping findings directly to the Marketing Manager to inform targeted campaign and retention strategy.

Trading Assistant (*Part-time, alongside full-time MSc*) | *Sainsbury's, London* Oct 2025 – Present

- Reliability and working under time pressure in a fast-paced, compliance-critical retail environment, balanced alongside a full-time postgraduate course load.

HACKATHONS & COMPETITIONS

- Financial Reporting Council (FRC) Hackathon:** Investigated LLM hallucination failure modes on structured UK iXBRL filings and restructured XBRL schemas for efficient AI ingestion, gaining hands-on exposure to Companies House data and UK financial reporting standards.
- Exoplanet ML Hackathon:** Built a probabilistic forecasting pipeline (LightGBM Quantile Regression) on HDF5 astronomical data to model prediction uncertainty.
- VLGE AI Hackathon, 3rd Place:** Pitched a technical concept for immersive AI-driven experiences.

PROJECTS

Quantitative Analysis: Discount Impact & Customer Segmentation [Source Code](#)

- K-Means clustering to segment customers into spending profiles; Logistic Regression and Decision Tree classifiers to predict high-value transactions; Linear Regression (MAE, R^2) to quantify discount elasticity effects on transaction value.

Responsible AI Framework for NLP Summarisation

- Ethical evaluation framework for Meta AI dialogue summarisation (BART), covering bias mitigation, privacy, and output transparency.

Facial Recognition Voting System [Source Code](#)

- Secure academic voting system combining LBPH/Haar Cascade facial recognition with OTP two-factor authentication (Python/HTML).