

ANISH KUMAR THAKUR SHARMA

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PROFESSIONAL SUMMARY

Computer Science educator and AI researcher specializing in Machine Learning engineering, diagnostic deep learning, and curriculum delivery. Experienced in designing end-to-end ML pipelines, detecting complex algorithmic bugs, and mentoring 150+ students in predictive modeling and data preparation. Proven track record in developing research-backed AI systems with a focus on model interpretability, validation integrity, and software quality.

CORE COMPETENCIES

- **Machine Learning & AI:** Deep Learning (Ensemble Learning, Soft Voting), Unsupervised Anomaly Detection, Explainable AI (Grad-CAM), Model Validation & Diagnostics
- **Data Science & Tools:** Data Preprocessing, Feature Engineering, Imbalanced Data Management, Weighted Cross-Entropy, Python, Scikit-Learn, SQL
- **Software Development:** Full-Stack Web Development, CMS Implementation, Code Sandboxing, Testing Protocols
- **Instruction & Coaching:** Academic Instruction, Student Mentorship, Technical Communication, Active Listening & Guidance

WORK EXPERIENCE

Graduate Teaching Assistant – Artificial Intelligence

Biratnagar International College (Affiliated with University of Wolverhampton) | **Sep 2025 – Present**

- Instruct 150+ undergraduate students on foundational and advanced data preprocessing, feature engineering, and model validation techniques using Python and Scikit-Learn.
- Design and facilitate hands-on laboratory sessions focused on cleaning, transforming, and structuring raw datasets to ensure data integrity prior to model training.

- Mentor student research and practical projects in predictive modeling, guiding them on rigorous evaluation metrics and preventing silent validation errors.

Full Stack Developer

Flip IQ (Remote) | Aug 2025 – Nov 2025

- Managed end-to-end development modules for a property data domain system within a fast-paced remote engineering environment.
- Collaborated cross-functionally across time zones to scope technical requirements, maintain project timelines, and deliver reliable codebase updates.
- Executed proactive problem-solving strategies to resolve feature bottlenecks and optimize application workflow.

KEY PROJECTS

EvalGuard – AI-Powered ML Teaching & Diagnostic Tool | *Lead Developer & System Architect*

- Architected a Socratic ML debugging platform designed to identify "silent" ML bugs (e.g., data leakage, improper metrics on imbalanced sets, hyperparameter tuning on test sets) that produce misleading results without throwing runtime errors.
- Built static and dynamic analysis workflows to extract code-level evidence, run sandbox testing, and automatically generate Socratic guidance for students alongside analytical evaluation reports for instructors.

NeuroLens: Early Alzheimer's Detection via Ensemble Deep Learning | *Primary AI Researcher*

- Developed a diagnostic deep learning framework for early-stage dementia classification from brain MRI scans, addressing severe class imbalance using Soft Voting Ensemble Learning and Weighted Cross-Entropy.
- Integrated Explainable AI (XAI) using Grad-CAM heatmaps to map neural network predictions directly to biological biomarkers, providing clinical interpretability.
- Achieved 93% overall diagnostic accuracy and 100% recall on rare "Moderate Demented" cases.

Unsupervised Anomaly Detection in Financial Services | *Machine Learning Researcher*

- Implemented an Anomaly Transformer model on the BankSim dataset to detect fraudulent transactions in an unlabelled, highly skewed financial environment.
- Optimized validation thresholds via cross-validation (CV-optimal threshold: 0.0222), achieving an ROC AUC score of 0.79 and high precision (98%) / recall (94%) for legitimate transaction streams.

Personal Knowledge Base System | *Lead Developer*

- Architected and built a centralized knowledge retrieval system from scratch using Python (98.3% codebase) to ingest, organize, and query scattered notes, links, and documents.
- Implemented modular data handling pipelines and standardized indexing logic to keep the codebase extensible while maintaining fast, consistent query results across edge cases.

EDUCATION

Bachelor of Science (Hons) in Computer Science

Herald College Kathmandu (Affiliated with University of Wolverhampton)

CERTIFICATIONS & LEADERSHIP

- **Aspire Leaders Program | *Aspire Institute***
 - Selected for a competitive global leadership initiative focused on critical thinking, social impact, and community-driven engagement.
- **Certified Career Coach (Foundation Level 1) | *Mindler* (Jan 2026)**
 - Trained in active listening frameworks and psychological needs assessment to provide structured, personalized professional guidance.
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- **Agentic Global Bootcamp | *UiPath***
- **Ethics in Health Research & Manuscript Writing Capsule | *NNJS IRC***
- **Python Specialization Sequence (*Beginner, Intermediate, Data Manipulation*) | *DataCamp***

- **SQL (Basic) Certification** | *HackerRank*

VOLUNTEER WORK & COMMUNITY SERVICE

Web Development Consultant & Developer

HKnutra (Hong Kong)

- Designed and deployed a full-featured website integrated with a custom Content Management System (CMS) tailored for regional trail running organizations.

Web Developer

Nepal Netra Jyoti Sangh (Kathmandu, Nepal)

- Overhauled and modernized the central organizational website, integrating a streamlined CMS to improve content publishing efficiency for health services outreach.