

Nawaraj Khanal

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Profile

AI/ML engineer focused on building practical, production-oriented systems across Computer Vision, NLP, and Graph Learning. Experienced in rapid prototyping, model optimization, and deploying scalable solutions with measurable performance improvements. Strong interest in intelligent system design, explainable AI, and real-world automation workflows.

Projects

- **Graph-Based Fraud & Anomaly Detection (GNNs)**

Designed hybrid graph learning pipelines using PyTorch Geometric, NetworkX, and Neo4j for fraud pattern discovery. Improved anomaly recall by 20% and successfully scaled experiments to datasets exceeding 1M nodes. Received AI Innovation Recognition 2025.

- **Heart Disease Prediction System**

Built an end-to-end clinical prediction pipeline using Logistic Regression, SVM, and SHAP explainability. Achieved 0.88 AUC-ROC with interpretable risk scoring. Awarded Best Project Proposal 2024.

- **Computer Vision Monitoring & Detection Experiments**

Developed real-time CV prototypes including drowsiness detection, object tracking, and medical image classification. Implemented OpenCV, YOLOv8, and augmentation workflows focused on efficiency and deployment readiness.

- **AI/ML Portfolio & System Assistant Platform**

Engineered an interactive AI-powered portfolio interface with intelligent navigation, chatbot command routing, and automated email workflows. Emphasized system architecture, UI engineering, and performance-focused frontend design.

Skills

- Programming: Python, JavaScript (ES6+), C++, C, SQL, Bash
- ML/DL: Scikit-learn, TensorFlow, PyTorch, OpenCV, YOLOv8, pandas, NetworkX, Node2Vec, SHAP
- Frameworks & Tools: FastAPI, Django, Streamlit, React, Node.js, Git, VS Code, Colab

Education

Bachelor in Computer Engineering

Purbanchal University

Relevant Modules: Machine Learning, Computer Vision, Graph Neural Networks, Data Analytics, System Architecture

Achievements

- Best Project Proposal — 2024
- AI Innovation Recognition — 2025
- Led an intensive AI/ML learning and experimentation series
- Designed lightweight AI-driven prototypes focused on workflow automation and intelligent interfaces