Aakriti Poudel

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github.com/aakritip15

Profile

Highly motivated and technically skilled Computer Engineering fourth-year undergraduate with a strong academic track record. Passionate about building real-world solutions using cutting-edge technologies in AI/ML, software development, and robotics. Experienced in deploying deep learning models, developing full-stack applications, and working on innovative projects.

Education

Kathmandu University, BE in Computer Engineering Feb 2022 – Feb 2026

- GPA: 3.9/4.0 (till now)
- **Relevant Coursework:** AI, Data Mining, Database Management Systems, Probability & Statistics, Data Structures & Algorithms, Software Engineering

Projects

MediQuery: Healthcare RAG System

- Built a retrieval-augmented generation (RAG) pipeline using Llama2 and LangChain to answer medical queries from WHO datasets. Fine-tuned embeddings with sentence-transformers and deployed a Flask API for inference.
- Tools Used: LLM, RAG

Transformer based next-word predictor with XAI

- Developed a custom Transformer model for next-word prediction using a self-curated dataset from ArXiv and Project Gutenberg. Implemented Linear SHAP for model interpretability, providing token-level explanations.
- Tools Used: Python, PyTorch, NLP, SentencePiece

PatchIt: Pothole Management System

- Trained a YOLOv8 model to detect potholes from live ESP32-CAM feeds, integrated with a web dashboard for municipal authorities.
- Tools Used: React, Node.js, Machine Learning, Esp32

Swarm Robotics: Search operation during disasters

- Designed a multi-agent robotic system using ESP32, motor drivers, and ultrasonic sensors for search and rescue operations. Implemented swarm communication via MQTT and incorporated a camera module for target detection and obstacle avoidance.
- Tools Used: Computer Vision, CoppeliaSim, IOT, ESP32, MQTT

Sign AI

- Developed a YOLOv5 model to classify 25+ ASL gestures in real-time using React for the front-end and Python for ML inference.
  Award: Education Category Winner, KU HackFest 2023 – Nepal's largest in-person hackathon.
- Tools Used: React, Node.js, Machine Learning

Leadership & Involvement

Microsoft Learn Student Ambassador 2023 - Present

- Actively engaged in promoting technical learning and organizing workshops for peers.

Organizing Committee, KU HackFest 2022 and 2024

- Contributed to the planning and execution of Nepal's largest in-person hackathon.

Member of IEEE KU-Student Branch 2023 - Present

- Collaborating on initiatives to promote research and professional development in engineering.

Awards and Certification

Associate Data Scientist -Data camp : DataCamp

KU Hackfest - 2023 : Winner of the Education Category

Supervised Machine Learning by Andrew Ng : Coursera

Intro to Statistics by Stanford : Coursera

Skills

Languages: Python, SQL, C, C++, Java, Dart, JavaScript

Databases Querying: PostgreSQL, MongoDB, Firebase

AI/ML: TensorFlow, PyTorch, Scikit-learn, YOLO, Data Wrangling, Predictive Modeling, LLM

Web/Mobile Development: React, Node.js, Flutter, REST APIs

Tools and Technologies: Git, VS Code, Unity