

ZENITH RAI

Machine Learning & Full-Stack Developer

sthaaryan123@gmail.com • +977 970-454-1759 • Kathmandu, Nepal • Seeking Internship Opportunities

PROFILE

BSc. CSIT student at Tribhuvan University (TU), Nepal's top-ranked university, with hands-on experience building end-to-end machine learning systems and full-stack web applications. Comfortable implementing ML algorithms from scratch (gradient descent, regularization) and shipping them behind production-style APIs with authentication and databases. Seeking an internship to apply and grow these skills on a real engineering team.

EDUCATION

BSc. Computer Science & Information Technology (CSIT) — In Progress

Tribhuvan University (TU), Nepal — top-ranked national university

High School (+2) — Shikshantar College GPA: 3.18

Lower Secondary — Cambridge Public High School GPA: 3.80

TECHNICAL SKILLS

Languages:	Python, C++, JavaScript, HTML, CSS, SQL
Machine Learning:	Supervised & Unsupervised Learning, Linear/Logistic Regression, Regularization (Scikit-learn)
Deep Learning:	ANN, CNN, RNN, LSTM, Transformers (TensorFlow & Keras)
Data & Analysis:	Data Cleaning, Feature Engineering, Visualization (Pandas, Matplotlib)
Backend:	FastAPI, Django
Frontend:	HTML, CSS, JavaScript
Database:	PostgreSQL, SQLAlchemy, MySQL
Other:	Local RAG pipelines with Ollama (LLM-powered document Q&A)

PROJECTS

Full-Stack Car Resell Price Prediction | FastAPI, PostgreSQL, Scikit-learn/NumPy

- Built a multi-linear regression model from scratch using mini-batch stochastic gradient descent with L2 regularization to predict used car resale prices from age, mileage, fuel type, brand, and engine specs.
- Designed a full-stack app with user authentication, prediction history tracking, and a PostgreSQL database, exposed through a FastAPI backend.

Heart Disease Prediction | Logistic Regression, Scikit-learn

- Developed a logistic regression classifier to predict the likelihood of heart disease from patient health indicators, including data preprocessing and feature selection.

Multi-Class Eye Disease Detection | CNN, TensorFlow/Keras

- Built a Convolutional Neural Network to classify eye scans into three conditions — diabetic retinopathy, cataract, and glaucoma — from labeled medical image data.
- Applied image preprocessing and multi-layer feature extraction to improve classification accuracy across classes.

Local RAG Document Q&A System | Ollama, LLM, Python

- Built a local Retrieval-Augmented Generation pipeline using Ollama as the LLM backend, enabling natural-language question answering over any text-based PDF without relying on external APIs.

Sentiment Analysis | LSTM, TensorFlow/Keras

- Built an LSTM-based model to classify text into positive, negative, or neutral sentiment, using word embeddings to capture long-range dependencies in sentences.