

NETRA PRASAD NEUPANE

Kathmandu, Nepal | mail.netraneupane@gmail.com | [GitHub](#) | [Medium](#) | [LinkedIn](#) | +977-9846626929

PROFESSIONAL SUMMARY

- About **five** years of experience in **Computer Vision, Deep Learning, Natural Language Processing** and other state-of-the-art **machine learning** technologies and about **two** years of experience on developing the **GenAI** related applications.
- hands-on experience in applying Data Science techniques to solve real-world problems, from data preprocessing, model development and fine-tuning to evaluation and deployment.
- Proficient programmer in **Python**.
- Experience in developing the **RESTful APIs** in Flask/FastAPI frameworks.
- Consistently writing **articles** on Artificial Intelligence and Machine Learning on **Medium**.
- Experience in using project management and team management tools such as Github, Slack, Jira etc.

EXPERIENCE

Senior Machine Learning Engineer

Zakipoint Health, Lalitpur Nepal, *July 2024- Present*

- Developed **table restructuring** and complex **unstructured document parsing** engine for **RAG** system.
- Developed **AI agent** to retrieve the information from multiple **healthcare documents** and member-specific **claim/elig data** present in MySQL databases.
- Architected and assisted on development of **data profiling tools** for **US healthcare** eligibility and claims source data.
- Developed **Support Chatbot** using **LLM & RASA** framework.
- Developed an **Intelligent Information Extraction system** to automate tedious PDF extraction tasks using **LLM** and advanced computer vision.

Machine Learning Engineer

Zakipoint Health, Lalitpur Nepal, *July 2022- Present*

- Developed the **next-procedure and disease prediction** engine using the **sequential recommendation**.
- Fine-tuned pre-trained language model and Built **Chatbot** on top of **vector database** and **language model**.
- Researched and Developed **Table Detection and Table Structure Recognition** system using state-of-the-art Machine Learning techniques.
- Researched and Developed an **information extraction system** from food and beverage packages.
- Built advanced computer vision and state-of-the-art machine learning-based **Identity Extraction System**.
- Application usage **logs** and member **engagement analytics** for **personalised experience**.

Guest AI/ML Trainer

Lincoln University College, Kathmandu Nepal, *June 2025 - July 2025*

- Conducted an AI/ML training program for BIT students, covering key topics in **AI, Machine Learning, Deep Learning, NLP, and Gen AI**.
- Explained core concepts like neural networks, CNNs, RNNs, LSTMs, **transformers**, and GPT models in an easy-to-understand way.
- Guided students through **hands-on projects** such as plant disease detection, stock price prediction, chatbot building, and RAG with large language models.
- Taught **practical skills** like forward/backward propagation, activation functions, regularization, and transfer learning.
- Helped students connect **theory to real-world applications** across different industries.

Software Engineer I, ML

Treeleaf Technology Pvt. Ltd, Lalitpur Nepal, *Nov 2021- July 2022*

- Developed **Identity Verification System**(face detection and recognition, liveness detection, image pre-processing and OCR, information extraction using Regular Expression and Named Entity Recognition, document verification etc.) using the gRPC framework.
- Research and development of **English Handwritten Recognition system**(data collection and training CNN-BiLSTM based architecture on MxNet framework, image pre-processing and alignment, text segmentation, and text recognition).

Machine Learning Internship

Treeleaf Technology Pvt. Ltd, Lalitpur Nepal, *Sep 2021 - Nov 2021*

- Research and Development of **Logistic Document Classifier using SVM** and online learning with the Stochastic Gradient Descent (SGD) Classifier
- Development of **logo detector** (image annotation, training and fine-tuning Yolov4 object detector)
- Information Retrieval (**optical character recognition** using Tesseract OCR, table extraction using Camelot-py, Reportlab for PDF document creation).
- Transfer learning & Fine-tuned open-source Tesseract engine.

EDUCATION

Bachelor in Computer Engineering

2021

Tribhuvan University, Institute of Engineering, Paschimanchal Campus, Pokhara

TECHNICAL SKILLS

Languages:	C/C++, Python, JavaScript, HTML5, CSS3
ML/DL Tools:	TensorFlow, Pytorch, scikit-learn, transformers
CV Tools:	OpenCV, scikit-image, Pillow
GenAI Tools:	Langchain, LlamaIndex, CrewAI, Langgraph, MCP etc.
Visualization Tools:	Matplotlib, Seaborn, Plotly
IDE/Dev. Tools:	Vscode, PyCharm, Jupyter
Vector Databases:	Weaviate, Chroma, Milvus, Elastic Search etc.
Databases:	MySQL, SQLite, PostgreSQL, ES etc.
Version Controls:	Git, Github
Serialization/RPC tools:	Protocol Buffers, gRPC
API and frameworks:	Flask, FastAPI, Django, Flask
Misc.:	RASA, Big Data, Web Scraping, Linux, Docker etc.

PROJECTS

Devanagari Handwriting Recognition

The research-based project consisted of the collection of 455 characters data(i.e. About 450 * 1000 character images were collected from around 2000 students and a pre-processed character dataset was prepared) and trained and tested on a CNN-based classification model(word recognition).

Tools: Python, OpenCV, TensorFlow, Matplotlib, Seaborn etc.

Face Recognition based Attendance System with anti-spoofing

The system uses deep learning to check liveness before conducting face recognition. If the detected face is real, it is then searched in a vector database. If a match is found, the system marks the user's attendance.

Tools: Vector Database, Tensorflow, OpenCV, firebase etc.

HR Assistant

AI agent to help Human resource managers to get the perfectly matched candidates with respect to Job Description. Additionally it also helps to create the job description for different job roles.

Tools: Python, LangChain, Langgraph, Milvus, PostgreSQL etc.

Stock Price Prediction

A deep learning-based system where data is collected from NEPSE(Nepal Stock Exchange) and about 20 years of data are trained on Stacked-LSTM & Random Forest is used to predict future indexes.

Tools: Python, Tensorflow, Matplotlib etc.

PROFESSIONAL CERTIFICATES

- AI for Everyone - DeepLearning.AI
- Neural Networks and Deep Learning - DeepLearning.AI
- AI for Medicine Specialization - DeepLearning.AI
- Data Scientist with Python Career Track - DataCamp
- Data Engineering Career Track - DataCamp
- MLOps Fundamentals Skill Track - DataCamp
- Natural Language Processing with Python Skill Track - DataCamp
- Developing Large Language Models Skill Track - DataCamp
- Front End Development with JavaScript and React JS - Genese Academy
- Introduction to Machine Learning with Tensorflow Nanodegree - Udacity
- Data Science Math Skills - Duke University
- Investment Literacy Bootcamp - Malpi International College
- Blockchain Fellowship - eSatya
- The entrepreneur's guide for beginners - Universitat de Barcelona

LANGUAGES

English, Nepali, Hindi