

Diwakar Basnet

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EDUCATION

Madan Bhandari Memorial College

June 2024

Bachelors in Computer Science

Relevant coursework: Statistics, Intro to AI/ML, Data Structures, DBMS, Image Processing, Data Warehousing and Data Mining

WORK EXPERIENCE

Treeleaf Technologies : NLP Developer

Feb 2024 – May 2024

- Developed **Python scripts** to automate Nepali article extraction and audio generation using **Piper TTS**.
- **Fine-tuned transcription model** for Nepali language, achieving a significant **Word Error Rate (WER)** reduction to **16.2**; outperformed base model by **60.5%**.
- Designed and implemented **Remote Procedure Call (RPC)** scripts to enable efficient **speech-to-text** and **text-to-speech** functionality.
- Built a **RAG-powered** chatbot for an application, enabling users to efficiently query information and enhance user experience.

SKILLS

- **Programming Languages:** Python, C++, C, JavaScript, Java.
- **Technologies:** LangChain, Faiss, ASR, Transformers, Tensorflow, PyTorch, NumPy, Pandas, Matplotlib, OpenCV, SQL, NLTK, SpaCy, Gensim, Docker, Streamlit, FastAPI.

TECHNICAL PROJECTS

Hugging Face Course on Transformers in Computer Vision

- Contributed to the open-source course by developing a module on fine-tuning **ViViT** model for video classification

Applicant Tracking System

- Created robust **vector representations** of resumes using advanced NLP techniques with tools like **NLTK**, **SpaCy**, and **Gensim** to extract relevant features.
- Implemented **K-Nearest Neighbors (KNN)** algorithm to classify resumes into predefined categories.
- Applied **cosine similarity** to compare vectorized resumes with job descriptions for relevant ranking.

Document Querying Chatbot

- Developed a chatbot utilizing the **Retrieval-Augmented Generation (RAG)** framework for document analysis.
- Integrated **LangChain** for efficient workflow orchestration within the chatbot.
- Utilized **FAISS** as the vector database for fast and accurate similarity searches.

Neural Machine Translation

- Implemented language translation between nepali and indigenous language by fine-tuning model and training custom tokenizer using **transformers**.
- Created a custom parallel translation dataset from web and social media.

Gif Recommender

- Enacted a robust desktop application using **OpenCV** to analyze user images and live video feeds in real-time, accurately detecting emotions and providing personalized recommendations for relevant GIFs via the GIPHY API.

CERTIFICATE

- Genese Academy - Completion of AWS AI/ML Interestship training – Mar, 2022
- Coursera - Deep Learning Specialization - Convolutional Neural Networks – Mar, 2023