Diwakar Basnet

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EDUCATION

BSc Computer Science | Madan Bhandari Memorial College | Nepal 2019 – 2024
- Relevant Coursework: Statistics, Image Processing, Artificial Intelligence, Computer Architecture

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WORK EXPERIENCE

NavaNexa Tech: ML Engineer Feb 2025 – Present
- **Optimized YOLOv8** model to boost QR code detection accuracy, and converted it into **ONNX** and **TensorFlow Lite** formats for efficient, lightweight integration with mobile applications.
- Generated synthetic data based on NID using **GIMP and Python** for optimizing **OCR** model.

Treeleaf Technologies : NLP Developer Feb 2024 – Aug 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.

EXTRACURRICULAR ACTIVITIES

Contributor, Hugging Face Computer Vision Course
- Developed educational content focused on vision transformers and collaborated with the community to enhance learning resources.
- Implemented **ViViT model** for video classification tasks.

TECHNICAL PROJECTS

Applicant Tracking System
- Created robust **vector representations** of resumes using advanced NLP techniques with tools like **NLTK**, **SpaCy**, and **Gensim** to extract relevant features.
- 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.

SKILLS AND CERTIFICATES

- **Programming Languages:** Python, C++, C, JavaScript, Java.
- **Technologies:** LangChain**,** Tensorflow, PyTorch, NumPy, Pandas, OpenCV, SQL, Docker, FastAPI, CUDA, Triton,
- **Certificate:** Coursera Deep Learning Specialization, AWS AI/ML Interestship training