Mejan Lamichhane

Undergrad in Computer Engineering
IV year
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Education

Degree/Certificate	Institute/Board	CGPA	Year
B.E. Computer Engineering	TU/IOE	(Current)	2021-Present
Hetauda School of Management	NEB	3.79	2018-2020
SEE	NEB Board	3.80	2018

Courses and Certifications

- **Core Curriculum Courses**: Computer Networks, Distributed Systems, Security Operations and Fundamentals, Artificial Intelligence (AI), Probability and Statistics, Data Structures and Algorithms (DSA), Software Engineering, Object Oriented Analysis and Design, Theory of Computation, Discrete Structure, C and C++ Programming, Microprocessor, Computer Organization and Architecture (COA), Engineering Mathematics
- **Supervised Machine Learning: Regression and Classification**: Linear Regression, Regularization to Avoid Overfitting, Logistic Regression for Classification, Gradient Descent, Supervised Learning
- **Advanced Learning Algorithms**: Tensorflow, Artificial Neural Network, Model Development and Training, Xgboost, Tree Ensembles, Convolutional Neural Network
- **Unsupervised Learning, Recommenders, Reinforcement Learning**: Anomaly Detection, Unsupervised Learning, Reinforcement Learning, Collaborative Filtering, Recommender Systems
- **Django Web Framework - Meta**:

Relevant Projects

- **Behavioral-based Network Intrusion Detection System*** *Final year project*
  - Developed a system to detect network intrusions using ML/DL models, balancing accuracy and inference time. The pipeline includes data preprocessing, model training, and deployment. Incoming network traffic is parsed and processed through an ML model, with predictions served via ElastiCache Pub/Sub. Evaluated multiple architectures to optimize performance.
  - Tools and technologies used: Python, PyTorch, Scapy, Scikit-learn, Matplotlib, Numpy, Pandas, Redis
- **Image-Gen** *Patternverse - Hackathon*
  Github
  - Used stable diffusion to create variations of carpet patterns from single input image.
  - Created a LLM enhanced pipeline for dynamic prompting and image generation.
  - Tools Technologies Used: Python, Pytorch, Hugging Face Transformers, Numpy, Matplotlib
- **Iris Recognition using Siamese Neural Network Architecture** *April 2024*
  Github
  - This project is a biometrics system that uses one shot recognition to recognize a person based on their iris. Key elements involve developing a Siamese Neural Network architecture using a pre-trained CNN model (VGG16 and ResNet50) for feature extraction and calculating similarity score based on the distance between feature vectors of two input images output by the CNN.
  - Tools and technologies used: Python, TensorFlow 2.X, TensorFlow Hub, Scikit-learn, Matplotlib, Numpy, OpenCV, Pandas
- **Machine Translation using RNN and Transformer** *October 2024*
  Github
  - This project demonstrates a simple and effective implementation of English-to-Spanish translation using two approaches: Seq2Seq with GRU (Gated Recurrent Unit) and Transformer architecture, both built with TensorFlow and Keras.
  - Tools and technologies used: Python, TensorFlow 2.X, Numpy
- **Restricted Boltzmann Machine Implementation** *Feb. 2024*
  Github
  - This repository contains an implementation of a Restricted Boltzmann Machine (RBM), a type of artificial neural network used for unsupervised learning tasks such as dimensionality reduction, feature learning, and collaborative filtering.
  - Tools and technologies used: Python, TensorFlow, Matplotlib, Numpy
- **Tower of Hanoi simulation** *Aug. 2023*
  Github

– This repository contains an implementation of a 3d tower of hanoi problem utilizing Beizer curves.
– Tools and technologies used: C++, OpenGL

- **Dog Breed Classifier** *Dec.2023*
  Github
  – A Multil-class Dog Breed Classification that classifies a given image of a dog into 120 possible classes
  – Tools and technologies used: Python, Pandas, NumPy,Sklearn, TensorFlow2.X,TensorFlow Hub, Scikit-learn

Skills

- **Programming Languages**: Python, C/C++
- **Frameworks**: Tensorflow, Django, Scikit-Learn, OpenGL
- **Developer Tools**: Git, Google Colab, Visual Studio, VS Code, MS-SQL
- **Non Technical**: Communication, Problem-solving, Collaboration, Product and Time Management
- **Areas of Interest**: Deep Learning, Computer Vision, Data Engineering, Back-end development