Jharana Sapkota

Virginia (Open to relocation) | jharanasapkota09@gmail.com | 5406050749 | [Portfolio](#) | [LinkedIn](#) | [GitHub](#)

Experience

ML Researcher/Graduate Research Assistant, Virginia Tech – Blacksburg, VA   Dec 2024 – Present

- Conducted research on time-series forecasting for environmental monitoring, developing a machine learning model to predict air pollution levels with improved accuracy and adaptive learning techniques
- Implemented deep learning models using TensorFlow/Keras to optimize energy consumption predictions for construction management applications, enhancing model efficiency and real-time decision-making

Graduate Teaching Assistant, Virginia Tech – Blacksburg, VA   Jan 2024 – Dec 2024

- Assisting in teaching undergraduate-level courses in computer science, specializing in Data Structure and Algorithm

Data Analyst, Baizani – Nepal   June 2023 – Dec 2023

- Built automated dashboards to track key KPIs, reducing reporting time by 40%
- Optimized e-commerce operations by analyzing shopping patterns and customer feedback, driving personalized product recommendations
- Developed predictive models to forecast sales trends and customer churn using machine learning techniques, improving decision-making and customer retention by 20%

Mobile and Web Application Developer, Skybase Innovations – Nepal   Jan 2021 – June 2023

- Developed cross-platform mobile applications using Flutter and Dart, integrating RESTful APIs for real-time data synchronization, ensuring high performance and responsiveness across iOS and Android platforms
- Built dynamic, responsive web applications using modern front-end technologies and frameworks, focusing on performance, scalability, and seamless user experiences

Projects

Thesis   2024-Present

- Conducting an in-depth thesis under **Dr. Mohammed Farghally**, analyzing student behavior in OpenDSA, correlating interactions with grades. **Tools:** Python, SQL

Rolling CNN+LSTM Model for Forecasting of Air Pollutant Levels   View on Google Colab

- Developed a CNN+LSTM model for real-time air pollution forecasting, implementing data preprocessing and sequential modeling with TensorFlow/Keras and Matplotlib. **Tools:** Python, TensorFlow/Keras, Pandas

Gamified Visualization of MDS   View on Observable

- Collaborated on a gamified Multidimensional Scaling (MDS) visualization tool to help users understand high-dimensional data through interactive 2D projections. **Tools:** D3.js, Observable

Crop Recommendation Dashboard   View on GitHub

- Built a intelligent crop recommendation dashboard using KNN. **Tools:** Python, Dash, Flask, scikit-learn

Credit Card Fraud Detection   View on GitHub

- Detected fraudulent transactions on an imbalanced dataset using machine learning with SMOTE and SHAP. **Tools:** Python, Pandas, Scikit-learn, Matplotlib

Job Posting Analysis   View on GitHub

- Created SQL queries to analyze job postings, skills demand, and salaries. **Tools:** SQL, PostgreSQL

Help for SEE   View on Google Play

- Built an exam preparation app with study materials and mock tests for entrance exams. **Tools:** Dart, Flutter

Education

Virginia Tech, MS in Computer Science   Jan 2024 – Present

Pokhara University, BCIS(IT)   Sept 2017 – Aug 2022

Technologies

Languages: SQL, Python, JavaScript, Dart, Java

Technologies: D3.js, Node.js, React.js, Tableau, Docker, Flutter, MongoDB, MariaDB, Git

Certifications

IBM (Coursera): Data Engineering, Data Analysis with Python, Data Visualization, Machine Learning with Python, Supervised and Unsupervised Learning, Recommenders, Reinforcement Learning