

# RAMDULAR YADAV

Data Science

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Computer Engineering  
IOE Purwanchal Campus, Dharan, Nepal

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Passionate Data Science and AI/ML Engineer with expertise in Machine Learning, Deep learning, and Data-Driven solutions. Skilled in Python, mathematics, and problem-solving, with a strong foundation in Probability and Statistics. As a dedicated Data Analyst, I thrive on transforming data into actionable insights and continuously learning new technologies to drive innovation.

## TECHNICAL SKILLS

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**Expertise:** Machine & Deep Learning, Computer Vision, Image Processing, Generative AI (GANs), LLMs, Retrieval-Augmented Generation (RAG), Fine-Tuning, Prompt Engineering, SQL, Databases.

**Languages:** Python, C++, SQL, HTML/CSS, Shell, Bash.

**Developer Tools:** VS Code, Colab, Jupyter Notebook, Anaconda, GPT/LLM API integrations, Hugging Face.

**Technologies:** GitHub, Excel, LaTeX, Database Management (MySQL).

**Libraries:** Matplotlib, Seaborn, Pandas, Numpy, Scikit-learn, Tensorflow, Pytorch, OpenCV-python, Flask.

**Frameworks:** Tensorflow, Pytorch, OpenCV-python, Hugging Face.

**Softskills:** Leadership, Management, Teamwork, Communication, Creative thinking, Analytical & Problem-solving

## PROJECTS

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**LangChain QA Chatbot:** Developed a Question-Answering chatbot using LangChain and the LLaMA model. Implemented the chatbot to efficiently handle a wide range of queries by leveraging the LLaMA model's natural language processing capabilities. The project involved fine-tuning the model, integrating it with LangChain, and optimizing the response accuracy, providing an interactive and user-friendly experience.

**Image Caption Generator:** Implemented an Image Caption Generator using a combination of the Flickr8k dataset and a personally curated collection of 150 real-world photos, each with corresponding captions. Leveraged the VGG16 model for image feature extraction and LSTM (Long Short-Term Memory) networks for generating descriptive captions. Achieved compelling results in automatically generating accurate and contextually relevant captions for diverse images.

**Student Performance Indicator:** Conducted thorough exploratory data analysis (EDA), comparing the performance of algorithms including KNeighborsRegressor, DecisionTreeRegressor, RandomForestRegressor, and AdaBoostRegressor, with Linear Regression emerging as the optimal choice. Trained and evaluated the model, achieving high accuracy on test data.

**Sign Language Detection:** Developed a sign language detection system using the YOLOv8 model. Fine-tuned the model with custom-created data to accurately identify and interpret sign language gestures. Utilized Roboflow tools for efficient data annotation, ensuring high-quality training data. This project demonstrates the integration of advanced computer vision techniques with custom model training for real-world applications.

**Face Recognition Attendance System:** An end-to-end face recognition attendance system, deployed with a user-friendly interface using Tkinter, harnessing deep learning techniques to accurately identify and record individuals, thereby streamlining attendance management workflows.

**Handwritten Digit Classification:** Handwritten Digit Classification is a deep learning project aimed at recognizing and categorizing handwritten numerical digits. Utilizing advanced neural network architectures, the system analyzes input images of handwritten digits, learning patterns and features to accurately classify them into predefined categories. This project showcases the capability of deep learning algorithms to understand and interpret handwritten characters, with applications in fields such as optical character recognition (OCR), digitized document processing, and automation of data entry tasks.

**Car Price Prediction:** Created a project to estimate car prices by gathering data, training the system to learn from it, and deploying it with Flask. The system provides an estimate of car prices, acting as a personal assistant for car buying or selling.

## EDUCATION

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- **Himalayan White House International College** 2019-2021  
*+2 Science* **CGPA: 3.35**
- **IOE Purwanchal Campus, Dharan** 2021-2025  
*Bachelor of Computer Engineering*

## WORK EXPERIENCE / EXTRACURRICULAR

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- **Fusemachine** April 2024 - Present  
*AI Fellowship*
  - Participating in an intensive AI Fellowship covering topics such as AI/ML, data science, regression and classification, clustering, neural networks, image processing, NLP, and reinforcement learning.
  - Gaining hands-on experience through projects involving predictive modeling, web scraping, model deployment, and reinforcement learning.
- **CodeforNepal** 2021-2022  
*Data Fellow*
  - Completed Data Camp as part of the Fellowship, honing skills in Python, machine learning algorithms, and data analysis and manipulation.
- **Karma Technology** November 2023 - May 2024  
*Data Analyst*
  - Responsible for creating datasets crucial to the success of the team's data-driven projects. Played a pivotal role in ensuring the availability of high-quality information, contributing significantly to the company's effective decision-making processes.

## CERTIFICATIONS

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- Python
- Data Science Course - Mastering the Fundamentals
- Introduction to Machine Learning
- Intro to ChatGPT and Generative AI