Yuvraj Singh

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Education

Vellore Institute of Technology, Bhopal *Sept 2022 – May 2026*
Btech in Computer Science

- GPA: 8.0/10.0
- **Coursework:** Professional Communication Skills for Engineers, Theory Of Computation And Compiler Design, Probability, Statistics and Reliability, Computer Vision, Database Management Systems, Artificial Neural Networks, Object Oriented Programming With C++, Computer Networks, Tools and Models for Data Science, Operating System, Data Structures and Analysis Of Algorithms, Deep Learning, Applied Machine Learning, Reinforcement And Representation Learning, Natural Language Processing

Projects

AUTOCAR — A Self Driving Car, Computer Vision Project

- Developed a **deep learning**-powered autonomous driving system using computer vision techniques .
- Preprocessed dataset of over **500+ driving images**, applying data augmentation strategies like flipping, scaling, and rotation to expand the training set.
- Designed a custom **convolutional neural network architecture** with Conv2D, MaxPooling2D, Dropout, and Dense layers to classify steering commands based on **Nvidia's End to End Learning for Self-Driving Cars Research Paper**.
- Achieved **94%** accuracy on a held-out test set, demonstrating the model's ability to accurately predict appropriate driving actions based on dataset given used to train the model.
- Integrated the trained model with vehicle controls to enable autonomous navigation, showcasing the system's **real-world viability**
- Tools Used: Python, TensorFlow, Pandas, Unreal Car Driving Simulator

STOCK PRICE PREDICTION MODEL — Based on LSTM Neural Network

- Engineered an LSTM neural network model to forecast 30-day stock price movements, achieving an average Mean Squared Error of **96%** on test data
- Processed historical market data using yfinance API, **implementing MinMaxScaler normalization** for optimal model performance
- Developed a Sequential architecture with Dense and LSTM layers, incorporating time-series analysis techniques
- Created dynamic visualizations using Matplotlib to analyze predictions against actual stock performance
- Tools Used: Python, TensorFlow, Pandas

GITAI — AI Powered Merge Conflict Resolver and Branch Merger *Ongoing*

- Builing a AI Powered GitHub merge conflict resolver and branch merger.
- Tools Used: Python, PYQT, GEMINI AI, GITHUB REST API

Technologies

Languages: Python • Java • C • C++ • SQL • JavaScript • HTML • CSS
Other: Git — GitHub (Version control), Langchain (for building LLM frameworks/projects) , MySQL (Database Management) , Linux , Pytorch , TensorFlow

Certifications

GEN Al using IBM Watsonx

GitHub Foundations by GitHub / Credly

Overview_of_Geocomputation_and_Geo-web_services_152_2024 by Indian Institute of Remote Sensing (IIRS), Indian Space Research Organization (ISRO)

NPTEL Certification (Privacy and Security in Online Social Media) by IIIT Hydrabad

Java (Basic) by Hackerank