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

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 by IBM Career Education Program

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

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