# Yuvraj Singh

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## Education

#### Vellore Institute of Technology, Bhopal

Sept 2022 - May 2026

Btech in Computer Science

## **Technologies**

Languages: Python, Java, C, C++, SQL, JavaScript, HTML, CSS

 $\begin{array}{l} \textbf{Other:} \ \ \text{Git} - \ \ \text{GitHub} \ (\text{Version control}), \ Langchain \ (\text{for building LLM frameworks/projects}) \ , \ \ \text{MySQL} \ (\text{Database Management}) \ , \ Linux \ , \ \ \text{Pytorch} \ , \ \ \text{TensorFlow} \end{array}$ 

#### Certifications

GEN Al using IBM Watsonx by IBM Career Education Program

Overview\_of\_Geocomputation\_and\_Geo-web\_services\_152\_2024 by Indian Institute of Remote Sensing (IIRS), Indian Space Research Organization (ISRO)

#### Extracurricular Activities

Solved 150+ problems on Leetcode

Took part in HackOn With Amazon - Season 5

Passed the **GitHub Foundations** certification exam validates subject matter expertise by measuring entry-level skills with GitHub basics like repositories, commits, branching, markdowns, and project management.

## **Projects**

## AUTOCAR ☑ — A Self Driving Car, Computer Vision Project

- 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** 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.

### 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
- Developed a Sequential architecture with Dense and LSTM layers, incorporating time-series analysis techniques
- o Created dynamic visualizations using Matplotlib to analyze predictions against actual stock performance

## SMARTMERGE 🗹 — AI Powered Merge Conflict Resolver and Branch Merger

Ongoing

- $\circ\,$  Builing a AI Powered Git Hub merge conflict resolver and branch merger.
- o Tools Used: Python, PYQT, GEMINI AI, GITHUB REST API

#### YouTube Video Summarizer Using FAISS and Google Gemini

- An end-to-end, retrieval-augmented generation system that lets users ask natural-language questions about any YouTube video and receive precise, context-aware answers drawn solely from the video's transcript.
- o Technologies & Tools: Python, Streamlit, LangChain, FAISS, Google Generative AI Embeddings (Gemini),

YouTube Transcript API