Samarth Pratap Singh

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EDUCATION

VIT Bhopal University, Bhopal **2023 – 2027**
B.Tech - Computer Science and Engineering - ***CGPA - 8.45*** *Bhopal, Madhya Pradesh*

COURSEWORK

- DSA
- Oops Concepts
- Cloud Computing
- DBMS
- Operating Systems
- Computer Networks
- Software Engineering

PROJECTS

Project Loom | Next.js, TypeScript, Sanity.io, NextAuth.js **Jan 2025**

- Engineered a full-stack project-sharing platform using Next.js, leveraging Server-Side Rendering (SSR) and Incremental Static Regeneration (ISR) to decrease initial page load times by 50%.
- Architected a scalable backend with the Sanity.io headless CMS, designing content models to efficiently manage and serve over 1,000 project entries and user profiles.
- Implemented secure user authentication with NextAuth.js and a PostgreSQL database, enabling users to manage profiles, post projects, and interact with content.

IMDB Movie Review Sentiment Analysis | TensorFlow, Keras, SimpleRNN, Streamlit **Aug 2025**

- Built and trained a SimpleRNN-based sentiment analysis model on the IMDB dataset (50K reviews, top 30K words, padded to 2,500 tokens), achieving 91% test accuracy.
- Implemented data preprocessing pipelines including tokenization, sequence padding, and a 128-dimensional Embedding layer, training end-to-end in 10 minutes on Colab GPU.
- Deployed an interactive Streamlit web app for real-time movie-review sentiment predictions, showcasing end-to-end deep learning workflow and web deployment skills.

Used Car Price Prediction Model | Scikit-learn, XGBoost, Streamlit **July 2025**

- Developed a model to predict market prices of used cars, processing a dataset of over 10,000 listings.
- Implemented robust data preprocessing pipelines, including one-hot encoding for categorical features and standard scaling for numerical data.
- Engineered a predictive model using XGBoost to forecast used car prices,achieving an R-squared score of 0.942.
- Systematically benchmarked 9 regression models and improved the top performer's accuracy through hyperparameter tuning with RandomizedSearchCV.

CNN CIFAR-10 Image Classification | TensorFlow, CNN, Keras, Streamlit **Sep 2025**

- Developed a CNN model for multi-class classification on the CIFAR-10 dataset consisting of 50,000 training and 10,000 test images across 10 classes of common objects and animals.
- Implemented image normalization, augmentation, and a robust architecture with convolutional, pooling, dropout, and dense layers to improve generalization and reduce overfitting.
- Trained with EarlyStopping callback achieving approximately 75% test accuracy while reducing overfitting using dropout layers; deployed an interactive Streamlit web app for real-time image upload and classification with confidence scoring.

TECHNICAL SKILLS

Languages: Python, C++, JavaScript/TypeScript, SQL
Full-Stack: Full-Stack: Next.js (React), Node.js, PostgreSQL, MongoDB, Docker, NextAuth.js, Sanity.io
Machine Learning & Deep Learning: TensorFlow, Keras, Scikit-learn, XGBoost, CNN, LSTM, SimpleRNN
NLP & Computer Vision: Hugging Face Transformers, Image Processing, Text Preprocessing
Tools & Concepts: Streamlit, Git, GitHub, REST APIs, Data Structures Algorithms

CERTIFICATIONS

- Applied Machine Learning in Python - Coursera

EXTRACURRICULAR

- AWS Club