





ABHISHANK SARAN

Leetcode  Github  LinkedIn  saranabhisank13@gmail.com  8340565429

EDUCATION

Dr. B R Ambedkar National Institute of Technology Jalandhar

Dec 2021- May 2025

B.Tech in Instrumentation and Control

CGPA: 7.84

SKILLS

Languages: Python, C/C++, SQL, MATLAB

Libraries and Frameworks: TensorFlow, OpenCV, Langchain, Hugging Face, Flask, Simulink, YOLO, StreamLit, Scikit Learn, ESP32, Docker

Topics: Reinforcement Learning, Computer Vision, NLP, Language Models and their Finetuning, OOPs, DBMS, Algorithms and Data Structures, Music Information Retrieval.

IDEs and Version Control: Github, Pycharm, VS Code, Jupyter Notebooks, Google Colab, Kaggle Notebooks

EXPERIENCE

Research Intern

June 2024 - July 2024

NIT Jalandhar

Jalandhar, Punjab, India

- Designed a controller for a Two-Wheeled Mobile Robot by using **Archimedes Optimization Algorithm** that has beaten prior benchmarks by reducing the settling time from 2.84 to 1.01 seconds with a Third-order controller.
- Currently working for design of adaptive controller with gain scheduling for the same system by utilizing and testing out various **Deep Reinforcement Learning algorithms**.

Machine Learning Intern

Dec 2023 - Feb 2024

FeyNN Labs Services

Guwahati, Assam, India (Remote)

- Segmented Indian EV-Market data to identify ideal market segments for new businesses.
- Utilized Python libraries such as Pandas, NumPy, Scikit-learn, and Matplotlib for Principal Component Analysis, Clustering, and Visualization.

PROJECTS

Speech2Speech | Flask, Google Cloud API, AssemblyAI APIs

[Github](#) [Live-Link](#)

- A flask app that uses assembly AI for transcription and GCP for storage and translation for conversion of audio from English to across 6 different native Indian languages and allows user to download converted audio.

FineTuning CLAP for Audio Text Alignment | Python, HuggingFace

[Github](#)

- Finetuned MultiModal LLM CLAP for alignment of musical chords with their audio, using Low-Rank Adaptation(LoRA) and reducing trainable parameters from 1.93m to 59k.

NPTEL Video Summarizer | Python, TensorFlow, OpenCV, YOLO

[Github](#) [Reference](#)

- Developed a Python script to download NPTEL video lectures and extract presentation slides using **ORB similarity matching**, extracting 10 relevant frames from over 111,000 frames from a 10-minute video.

Water Level Control using Reinforcement Learning | MATLAB, Simulink

[Github](#) [Reference](#)

- Simulated a water tank control system using **Actor-Critic method**, replacing PID control, achieving precise level control.

FireVision | YOLO, ESP32, Python, C++, Multithreading

[Github](#)

- Developed a system using ESP32 and YOLO for fire detection, triggering alarms, and safety measures based on detections. The system trips the MCB if a fire is detected in 20 continuous frames and sends an email alert.

Music Information Retrieval of Guitar Chords | Python, Librosa

[Github](#)

- Performed MIR on 8 different guitar chords by performing FFT, plotting of MEL-Spectrograms, Chromatograms, and RMS values, and Amplitude Envelopes of the signals

CODING PROFILES AND ACHIEVEMENTS

- Top **3.25%** globally on **Leetcode** with a max rating of **1969 (Knight)**.
- Top **5%** programmers in India, **Specialist** on **Codeforces** with a rating of **1428**.
- Ranked **3889** out of **20000+** Participants in Meta Hacker Cup **2023**, qualified for round **2**.
- Participated in over **100** live coding contests across all platforms.