Swastik Pradhan

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EDUCATION

Lovely Professional University　　　　　　　　　　　　　　　　　Phagwara, India
B.Tech in CSE (Big Data Analytics)　　　　　　　　　　　　　　　*Aug. 2023 – July 2027*

Sri Prakash Synergy School　　　　　　　　　　　　　　　　　　Peddapuram, India
Senior Secondary (Class XI–XII)　　　　　　　　　　　　　　　　*Apr. 2021 – Mar. 2023*

PROJECTS

Signify – Real-Time Indian Sign Language Translator

Tools: Python, OpenCV, TensorFlow, Keras, Tkinter
- Built for Sociothon (NSS Hackathon) – a real-time ISL-to-speech and speech-to-gesture translation app.
- Achieved 90–94% classification accuracy on 27 Indian Sign Language gestures using a CNN-based classifier.
- Applied data augmentation, dropout, and early stopping to enhance model generalization.
- Developed a multilingual, offline-capable GUI with gesture animation and text-to-speech synthesis.

Real-Time Memory Allocation Tracker

Tools: Python, Tkinter, Threading
- Engineered a simulation tool for dynamic memory allocation (First Fit, Best Fit, Worst Fit) with real-time visualization.
- Integrated multi-threading to emulate concurrent process execution and memory access.
- Visualized fragmentation, compaction, and allocation events to support OS education and debugging use-cases.

Music Genre Classifier with Tkinter GUI

Tools: Python, scikit-learn, Librosa, Pandas, NumPy, Tkinter, Git/GitHub
- Built a music genre classifier using GTZAN dataset and achieved 86% accuracy with Random Forest.
- Extracted audio features with Librosa and designed a Tkinter GUI for real-time genre prediction.
- Tracked versions and collaborated via Git and GitHub for streamlined development.

CO-CURRICULAR ACTIVITIES

National Service Scheme (NSS)

Unit Sarvshresth, Lovely Professional University
- Participated in community development and awareness drives.
- Organized blood donation camps, cleanliness drives, and social outreach programs.
- Volunteered for the Red Cross Amritsar Drugs Awareness Camp educating on dangers of drug abuse.

SKILLS

Programming: Python, C++, C, Java, SQL, PL/SQL
AI/ML Frameworks: TensorFlow, Keras, OpenCV, scikit-learn, NumPy, Pandas
Data Tools: IBM Cognos, Tableau, Google Colab, VS Code, IBM Cloud, Git
Web Technologies: HTML, CSS, React.js, Node.js
Concepts: Neural Networks, CNNs, Supervised Learning, Data Preprocessing, Basic Reinforcement Learning

CERTIFICATIONS

- **Hands-on Approach to AI for Real-World Applications**
  IIT Kharagpur (AI4ICPS Hub Foundation) with TCS iON
  Topics: Supervised Learning, Fine-Tuning, LLM Basics, Reinforcement Learning
  Duration: Aug–Nov 2024　　—　　Certificate ID: 241911L1517

- **Unlocking DSA with C**
  CSE Pathshala – Focused on algorithmic problem solving and complexity analysis
  Duration: Feb–Mar 2024　　—　　Certificate ID: CP-20240203-DSA077