

# Abhinav Singh

abhinavsingh25001@gmail.com | +91 87706 37174 | LinkedIn | Github

## Skills

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

**Technologies:** Machine Learning, Cloud Computing, Data Structures, Algorithms, Software Design, Ethical Hacking

**Operating Systems:** Linux/Unix, Windows

**Tools:** Git, MATLAB, Simulink, Microsoft Office (Word, PowerPoint, Excel, etc.)

**Databases:** MongoDB, MySQL, PostgreSQL

## Experience

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**Intern,** All India Council for Technical Education (AICTE) Dec 2024 – Jan 2025

- Developed a real-time Yoga Pose Detection System using Python and MediaPipe, enabling accurate classification of common yoga poses.
- Preprocessed video input streams and applied pose estimation models to track body landmarks.
- Achieved high accuracy in classification by training custom logic based on key joint positions and angles.
- Visit - [Yoga Pose Detection App](#)

## Education

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**VIT Bhopal,** BTech in Computer Science Sept 2022 – May 2026

**The Bhavans Prominent International School,** CBSE – 12th Grade (Science Stream) Apr 2021 – Mar 2022

**The Bhavans Prominent International School,** CBSE – 10th Grade Apr 2019 – Mar 2020

## Projects

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**Beru AI Personal Assistant** *AI-Powered Full Stack Application*

*Python, NLP, Speech-to-Text, Text-to-Speech, Groq, Cohere, Hugging Face, PyQt5*

- Built an AI assistant with voice recognition, real-time web search, and automated task management.
- Integrated Groq, Cohere, and Hugging Face for intelligent responses, AI-driven image generation, and multi-language support.
- Designed a modern, intuitive GUI for seamless interaction and accessibility.

**Emotion Recognition System** *Computer Vision, Deep Learning System*

*Python, TensorFlow/Keras, OpenCV, CNN, Deep Learning*

- Developed a CNN-based real-time emotion recognition system using facial expressions.
- Trained the model on a labeled dataset, achieving over 90% accuracy in emotion classification.
- Integrated OpenCV for real-time face detection and emotion analysis using a webcam.
- Implemented data preprocessing techniques including grayscale conversion, resizing, and normalization for improved model performance

**Face Recognition Attendance System** *AI-Powered Attendance System*

*Python, OpenCV, Face Recognition, Joblib, Concurrent Processing*

- Developed an AI-powered attendance system using real-time face recognition.
- Implemented a training phase for capturing and storing facial images to enhance recognition accuracy.
- Optimized the system using multi-threading for faster face recognition and attendance logging.
- Stored daily attendance records in CSV format, ensuring easy tracking and retrieval.

## Advanced Grammar Checker with Gemini

NLP Desktop Application

*Python, Google Gemini Pro, Speech Recognition, Tkinter, NLP*

- Developed a desktop application for advanced grammar and spelling checks using Google's Gemini Pro model.
- Integrated real-time speech recognition to transcribe and correct spoken text with detailed feedback.
- Implemented a customizable prompt system to fine-tune text corrections for multiple languages.
- Designed a responsive UI using Tkinter with threaded backend processing for smooth user experience.

## Podcast Transcription with Whisper

Speech Processing Pipeline

*Python, OpenAI Whisper, Speech Recognition, FFmpeg, PyDub*

- Developed an automated podcast transcription system using OpenAI's Whisper model for speech-to-text conversion.
- Implemented silence-based chunking to enhance transcription accuracy for long-form audio.
- Integrated FFmpeg for MP4 to MP3 conversion, enabling seamless processing of both audio and video files.
- Designed an efficient pipeline for real-time audio processing and automated file handling.

## Extracurricular Activities

**Technical Lead**, Linpack Club, VIT Bhopal – Bhopal, Madhya Pradesh

Dec 2023 – Mar 2025

- **Led the Technical Team of Linpack Club**, overseeing MATLAB-based projects, managing hackathons, and organizing multiple events to foster innovation and collaboration within the team.

## Certifications

- Agile Methodologies, **IBM**, Issued Apr 2025
- Cyber Security Analyst, **IBM**, Issued Apr 2025
- DevOps Fundamentals, **IBM**, Issued Apr 2025
- MongoDB Developer's Toolkit: CRUD Mastery with Node.js, Python, **GeeksforGeeks**, Issued Jan 2025
- Complete Ethical Hacking Bootcamp, **Udemy**, Issued Dec 2024
- Machine Learning Specialization, **DeepLearning.AI**, **Stanford University**, Issued Jun 2024
- Cloud Computing, **NPTEL**, Issued May 2024
- The Bits and Bytes of Computer Networking, **Google**, Issued Dec 2023
- CentOS Linux and Ubuntu Linux: Managing Packages, **Udemy**, Issued Jul 2024
- Ask Questions to Make Data-Driven Decisions, **Google**, Issued Jul 2023
- Foundations: Data, Data, Everywhere, **Google**, Issued Jun 2023
- Version Control, **Meta**, Issued Jun 2023
- Introduction to Android Mobile Application Development, **Meta**, Issued Apr 2023
- Python Data Structures and Algorithms, **LinkedIn**, Issued Mar 2023
- Python Essential Training, **LinkedIn**, Issued Mar 2023
- How to Speak So People Want to Listen, **LinkedIn**, Issued Oct 2022
- Learning C++, **LinkedIn**, Issued Oct 2022
- Learning MATLAB, **LinkedIn**, Issued Oct 2022
- Simulink Onramp, **MathWorks**, Issued Oct 2022