

Bhavya Soni

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Education

Vellore Institute of Technology, VIT Vellore University

July 2021 - July 2025

Bachelor of Technology in Electronics and Communication Engineering.

7.5 CGPA

Skills

Programming Languages: Advanced in C++, C; Intermediate in SQL, Java, Assembly C.

Scripting: Python, Bash.

Frontend Skills: React, Redux (State Management), React Router, Material UI, Tailwind.

Backend Skills: Node.js, Express.js, MongoDB, Flask, PyTorch, TensorFlow.

Core Skills: Cadence (VLSI), LT Spice, ModelSim, HFSS (Antenna Designing), Linux (OS), Embedded C.

Experience

Software Engineer Intern

Sep 2023 – Oct 2023

Nayara Energy Limited, Jamnagar, Gujarat

- Modernized the Employee Management System using PHP & MySQL, improving load speed by 60% and system performance by 20%, impacting 1000+ users daily
- Directed full-stack development tasks, implementing performance optimizations that reduced page load times by 60%; redesigned the database structure, enhancing data retrieval speeds and enabling analytics capabilities.
- Merged biometric attendance devices, streamlining authentication processes and reducing errors by 30%.
- Revamped existing Laravel framework applications, optimizing code efficiency and achieving a 25% decrease in page load times, improving user experience for an average of 1,000 daily visitors.
- Championed the adoption of agile methodologies across cross-functional teams, leading to the successful completion of 10+ projects within established deadlines and enhancing collaboration by reducing communication delays by 25%.

Research Student

Nov 2023 – Feb 2025

VIT University, Vellore, TN

- Optimized OpenCV-based classification models for PhD research, achieving a 15% increase in image recognition accuracy by fine-tuning hyperparameters and refining feature extraction techniques.
- Contributed to the final preparation phase for patient enrolment in an AI-assisted diagnostic research project.

Projects

SMART FIR Portal

Feb 2024 - May 2024

MERN, Redux, JWT, Gemini & Speech-to-Text API

- Designed a secure FIR registration system with admin privileges for officers, integrating JWT authentication (1-hour expiry) to ensure 99.9% login success rate and robust access control.
- Incorporated multilingual Speech-to-Text APIs, enhancing accessibility by 40% and simplifying user input.
- Used Gemini APIs for IPC section prediction, achieving a 30% improvement in the accuracy of initial complaint classification.

REAL-TIME POSTURE & INJURY RISK ANALYSIS SYSTEM

Nov 2024 - Feb 2025

Flask, OpenCV, Media Pipe, NumPy, Matplotlib

- Engineered a Flask-based web application integrating webcam input and Media Pipe, achieving real-time analysis of athletic postures and flagging 95% of potential injury risks during workouts.
- Architected MediaPipe integration for precise body landmark detection, enabling accurate pose estimation and movement tracking of shoulders, knees, and spine; reduced latency by 15 milliseconds.
- Applied Matplotlib to plot live motion graphs and angle fluctuations, allowing visual feedback directly within the browser.

Automatic Lung Cancer Detection using AI & ML

Dec 2023 – Apr 2025

Python, OpenCV, Scikit-learn, SVM

- Built an AI-driven system to detect lung cancer from CT scan images using image processing and machine learning.
- Extracted statistical and texture-based features to train a Support Vector Machine (SVM) classifier for accurate diagnosis.
- Managed a cross-functional team of 3 engineers, providing technical guidance and mentorship throughout the research and development process, enhancing team productivity.

Leadership & Activities

Core Committee Member

Mar 2022 – Feb 2023

Youth Red Cross, VIT Vellore

- Coordinated volunteer efforts and facilitated blood donation logistics for YRC's annual camp, achieving over 500 successful blood donations.