SPARSH TIWARI

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EDUCATION

VIT Bhopal University **2022 - 2026**
B.Tech in Computer Science & Engineering, specialization in Artificial Intelligence and Machine Learning
Cumulative GPA: 8.86/10

Saraswati Vidya Mandir Inter College, Kanpur, Uttar Pradesh
Class XII (CBSE) - Percentage: 91.6%

EXPERIENCE

Live Project Trainee | Madhya Pradesh Council of Science and Technology(MPCST)– Madhya Pradesh **2023-2024**

- Developed an autonomous drone system capable of detecting crop diseases using image processing and computer vision techniques.
- Integrated a Raspberry Pi with an onboard camera module to capture real-time aerial images of crops; applied OpenCV and Deep Learning techniques to detect disease patterns in leaves.
- Enabled real-time data collection and disease classification using AI/ML model, improving decision-making for farmers.

PROJECTS

Skin Cancer Classification Web App | Python,OpenCV, Streamlit, Flask

- Designed a web-based application for skin cancer classification using Custom CNN model and MobileNetV2 achieving 97% and 98% accuracy in accurately classifying diseases, integrating OpenCV for real-time video processing and image detection , enhancing the system's responsiveness and reliability by 30%.
- Leveraged flask for a fast and efficient backend, ensuring a seamless user experience..

Dental Appointment Booking Website | Express.js, MongoDB, Node.js, HTML, CSS, JavaScript, Bootstrap

- Deployed a responsive, visually appealing admin dashboard using Bootstrap and custom CSS,to manage patient records, appointment bookings , notifications.and ease of use by 40%.
- Enhanced clinic efficiency by 30%,reduced scheduling errors, and improved patient satisfaction with a modern, user-centric interface.

LLM Based Personal Knowledge Assistant | Python**,** LangChain, Streamlit

- Developed a Personal Knowledge Assistant using retrieval-augmented generation that indexes notes,books and documents for natural language querying.
- Implemented semantic search using Sentence - BERT embeddings and FAISS vector store.

AQI Based Indoor Plant Prediction System| Python**,**Plotly, Dash,

- Implemented an interactive AQI-based plant recommendation system using machine learning models and dashboard using Dash and Plotly, achieving real-time data integration from OpenWeatherMap API and supporting over 50 plant suggestions based on AQI levels.
- Built a system that uses real-time data ,storing the data in MongoDB and reducing manual work by 90% using automatic API input.

EXTRACURRICULAR ACTIVITIES

Technical Co-Lead, Android Club
VIT Bhopal University **2024 - 2025**

- Orchestrated 5+ weekly meetings to plan and organize club events.
- Facilitated a technical workshop for 50+ participants on integrating IoT devices like Raspberry Pi with databases and machine learning models, enhancing attendee skills and boosting project efficiency by 40%.
- Spearheaded a crowdfunding campaign for a major technical event utilizing social media and peer networks to raise 60% of the required funds , ensuring successful execution and increased participant outreach.

SKILLS

Programming Languages: Python, Java, C++
Web Development : HTML,CSS,JavaScript
Technical Skills: MongoDB ExpressJS, NodeJS, Computer Vision, Data Analysis , Iot , Data Science,Machine Learning, Deep Learning
Data Analysis : Data visualization, Statistical modeling, Feature engineering
Data Structures & Algorithms: Solved 400+ problems in Java (Leetcode, GeeksforGeeks, Code360)

ACHIEVEMENT

- Ranked in the Top 10 at SISTec Hackathon 2024.
- The 'AI-powered Pesticide Spraying Drone' was selected among the top 5 projects at Project Expo 2024, organized by VIT Bhopal University.
- **Design Patent for Automated Spraying Machine |** Patent Number: 418920-001