Vinayak Kamankar

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Career Objective / Summary

B.Tech student specializing in Artificial Intelligence and Machine Learning, with a strong background in IoT, Embedded Systems, and Web Development. Proficient in Python, Java, and Web Technologies with hands-on project experience in smart systems. Passionate about building intelligent and sustainable tech solutions. A quick learner with a problem-solving mindset and strong teamwork and leadership abilities.

Academic Credentials

Bachelor of Technology – AIML   2024 – 2027
Sanjivani University, Kopargaon

Diploma in Mechatronics – 80%   2021 – 2024
Government Polytechnic, Nashik

Skills

Technical Skills:

- Programming Languages: Python, Java, HTML, Java Script , CSS
- Embedded Systems Development
- Microcontroller Programming
- CAD & Engineering Design

Soft Skills:

- Leadership & Teamwork
- Problem Solving
- Creative Thinking
- Communication

Strengths

- Quick Learner and Adaptable
- Strong Work Ethic
- Innovative Thinking

Projects

1. Design and development of Traffic violation detection System

- **Objective:** To reduce urban traffic congestion and enhance road safety through real-time adaptive signal control and automated violation detection.

- **Technologies:** NodeMCU, Ultrasonic Sensors, IR Sensors, Python, OpenCV, ANPR (Automatic Number Plate Recognition) Camera, Cloud Services.

- Implemented dynamic signal timing that adapts to real-time vehicle density.
- Developed a computer vision module for automated red-light violation detection and license plate logging.
- Designed a cloud-based dashboard for monitoring traffic flow and violation data.

2. AgroSense – Smart Crop Analysis & AI Agronomy Assistant

- **Objective:** To provide farmers with data-driven agricultural decisions by recommending optimal crops using ML and offering expert consultation on pest control and farm management using a multimodal AI.

- **Technologies:** Python, Flask, Scikit-learn (Random Forest), Pandas, Google Gemini API, HTML, CSS, JavaScript.

- Developed an ML model (RandomForestClassifier) that recommends one of 22 crops by analyzing 7 soil/environmental factors (N, P, K, pH, temperature, humidity, rainfall).
- Integrated a Gemini-powered AI assistant for expert advice on irrigation, fertilizers, and pest management.

3. Fire Fighting Robot with Web Integration

- **Objective:** To design and build an autonomous robot capable of detecting and suppressing fires in indoor environments, with a web-based manual override.

- **Technologies:** ESP32-CAM, Flame Sensor, Ultrasonic Sensors, Motor Driver, Web Interface (HTML/JS), WebSocket.

- Programmed autonomous navigation with obstacle avoidance using ultrasonic sensors.
- Enabled real-time fire detection using flame sensors, triggering an automated water pump.
- Created a web-based UI for live video streaming and manual remote control of the robot's movement and water cannon.

4. Cyber Shield – Advanced URL Security Analyzer

- **Objective:** To protect users from phishing, malware, and malicious websites by analyzing URLs using AI-based threat intelligence and heuristic security scoring.
- **Technologies:** React, Node.js, Express, Axios, TailwindCSS, Chart.js, Google Safe Browsing API, JavaScript, LocalStorage.

- Developed a real-time URL analysis system that generates instant security and risk scores.
- Integrated Google Safe Browsing API for AI-driven threat intelligence and detection.

- Built blended threat scoring combining AI signals and heuristics for phishing and malware detection.
- Added batch evaluation module with metrics like Precision, Recall, F1-Score, and ROC-AUC.

Internship

Maceltron Machines Pvt. Ltd., Nashik
Electrical Intern | Jan 2024 – Apr 2024

- Assisted in designing and wiring control panels.
- Tested and debugged PLC-based automation systems.
- Handled documentation and setup for industrial machines.

Certifications

- Power BI Data Modelling Basics
- SQL and Relational Database 101 – IBM
- Building Cloud and Multicloud Applications – IBM

Achievements

IIT Guwahati Event (Techniche) - First Rank in Micromouse Competition (Maze Solving Robot)

IIT Bombay Techfest – Participated in Robotics Competition (Line Maze Solving Robot)

Extra-Curricular Activities

- Vice President of the Design & Thinking Club under the Innovation Cell .
- Cricket: Active member of the college cricket team. Participated in multiple inter-departmental and college-level tournaments.
- Volunteered in tech fests and workshops.

Personal Details

- Date of Birth: November 4, 2005
- Address: Jakhori, Nashik, Maharashtra
- Languages Known: English, Hindi, Marathi