

KALPESH SOLANKI

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Education

Government Engineering College Rajkot	GTU
B.E. in Electronics and Communication Engineering	2021 - 2025
CGPA : 8.04	
Government Engineering College Rajkot	GTU Minor
Specialization in IOT	2021 - 2025
Jawahar Navodaya Vidyalaya Anand	2021
12th Science (PCM) CBSE	78.8%
Jawahar Navodaya Vidyalaya Anand	2019
10th CBSE	74%

Projects

- **Mechanism to Prevent Road Accidents Between Vehicles****
Advanced Collision Avoidance: Promote safer roads and reduce accidents with cutting-edge technology like LiDAR, radar, and cameras. Integrate these sensors (ultra sonic) with powerful processors for real-time analysis and potential interventions (automatic braking, warnings) while adhering to safety regulations
- **Intelligent Glasses for Blinds using Raspberry Pi**
Intelligent Glasses: Engineered an assistive device utilizing Raspberry Pi, ultrasonic sensors, and computer vision algorithms with OpenCV for obstacle detection and real-time audio feedback via Text-to-Speech (TTS) integration. Delivered an efficient, embedded system to enhance navigation for visually impaired users.
- **Wireless Data Transmission NodeMcu to Arduino Uno**
Over The Air: Developed a wireless communication system utilizing NodeMCU and Arduino Uno with OTA (Over-The-Air) updates. Enabled seamless data transmission and real-time integration using ESP8266 Wi-Fi for efficient IoT applications.
- **Programming autonomous systems**
Designed and implemented algorithms for autonomous systems, focusing on sensor integration, decision-making, and real-time navigation. Utilized frameworks like ROS and microcontrollers to achieve precision, adaptability, and efficient task execution in dynamic environments.
- **Build a Smart Irrigation System using Raspberry Pi**
Effortless Plant Care: Automate watering with an Arduino microcontroller, a soil moisture sensor, and a water pump for healthy plants without overwatering.
- **Robotics**
Robots: Developed and programmed robotic systems integrating sensors, actuators, and microcontrollers for autonomous operations. Focused on real-time control, path planning, and object detection using frameworks like ROS and OpenCV to enhance functionality and precision.
- **Shieldme Anti-Theft Android App**
Track-it-Even-it-is-off: Shieldme Security offers the unique feature of Fake Shutdown as part of Anti-Thief which actually allows you to not only track your lost phone location, but also retrieve surrounding images, audio or video files to help with police investigation. Including Features Fake Shutdown, Intruder Alerts, Lost Phone Tracking, Fake Airplane Mode, Emergency SOS, Low Battery Alerts.

Experience

Embedded Engineer Intern	
Agastya Electronics and IT Solutions	16th June 2024 to 15th July 2024 (1 month)

- Developed an innovative, Digital Weigh Scale using STM32F103C8T6 -Developed an advanced digital weighing scale using the STM32F103C8T6 microcontroller and HX711 load cell amplifier for accurate weight measurement. Implemented calibration algorithms to ensure precise readings and efficient real-time weight display

Awards and Honors

Winner , SPARK EVENT GEC(INTERCOLLEGE)	2024
Regional , SSIP Hackathon 2022	2022

Skills

Programming Languages:  Python,  JavaScript  C,  C++,  Java  PHP,  SQL,  Assembly,  Shell Scripting,  Lua,  VHDL,  Verilog,  Linux

Tools and Frameworks: GitHub, VS code, HFSS, Hexo, Proteus, Linux, Android Studio, Arduino IDE, STM32 CUBE IDE, NodeMCU Flasher

Cyber Security: Network Penetration Testing | Vulnerability Scanning | Information Gathering | Pre and Post Exploitation | Android and PC Hacking | Offensive Security | IDORs | WAP | CSRF | SSRF | Password Cracking | Reverse Engineering | Game Hacking Online and Offline | Virtualization | Hack the Box Player |

Languages: Gujarati (native), Hindi (proficient), English (proficient)