

ADITYA IRKAL

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Summary

As an Electronics and Communication Engineering student, I am seeking an entry-level position to apply my skills and education, gaining practical experience and contributing to organizational success. Eager to learn and grow, I aim to develop essential skills, build a strong career foundation, and make meaningful contributions within a supportive team environment.

Education

KLS Vishwanathrao Deshpande Institute of Technology

Bachelor of Engineering in Electronics and Communication, CGPA - 7.59

Dec 2021 – May 2024

Haliyal, Karnataka

Tippu Shaheed Institute of Technology

Diploma in Electronics and Communication, Percentage - 69.4

July 2018 - Sept. 2021

Hubli, Karnataka

Relevant Coursework

- Data Structures
- Frontend Development
- PCB Designing
- Digital Systems Design
- VLSI
- Signals and Systems
- MATLAB
- Computer Architecture

Projects

Self Driving Car | *Python, OpenCV*

May 2023

- A self-driving car prototype can be developed using Raspberry Pi and OpenCV, enabling autonomous navigation through the integration of computer vision algorithms and hardware components.
- Raspberry Pi interfaces seamlessly with various hardware components, simplifying the integration of cameras, motor controllers, and other peripherals required for the car.
- Building a self-driving car prototype with these tools can serve as an excellent educational project.

Design of 5:32 Decoder Using Cadence Virtuoso | *Cadence*

February 2023

- Designing a 5:32 decoder in Cadence Virtuoso entails creating a digital circuit with 5-bit input and 32-bit output.
- The iterative design process involves refining the 5:32 decoder based on simulation results and optimizing its performance, with documentation capturing design decisions and adjustments made during the process.
- Utilizing features in Cadence Virtuoso ensures efficient and accurate circuit design, complemented by simulations for functionality and timing verification using Synopsys tools.

Obstacle-avoidance car | *ESP8266*

June 2024

- The obstacle-avoidance car integrates an ESP8266 microcontroller with an ultrasonic sensor and a servo motor to navigate around obstacles.
- The ultrasonic sensor continuously scans for obstacles and measures distances, sending this data to the ESP8266.
- Based on the input, the ESP8266 controls the servo motor to adjust the car's steering direction, allowing it to avoid collisions and navigate safely.

Smart Street Light | *ESP8266*

June 2024

- The smart street light utilizes an ESP8266 microcontroller to provide intelligent lighting solutions.
- Equipped with sensors to detect ambient light and motion, the system uses the ESP8266 to adjust the light's intensity based on environmental conditions and human presence.
- This setup not only enhances energy efficiency by dimming or turning off lights when they are not needed but also enables remote control and monitoring via a Wi-Fi network for optimized performance and maintenance, allowing it to avoid collisions and navigate safely.

Touch-free Temperature Monitoring System | *ESP8266*

June 2024

- The touch-free temperature monitoring system utilizes an infrared temperature sensor and an ESP8266 microcontroller to measure and transmit body temperature data without physical contact.
- The infrared sensor accurately detects body temperature by measuring emitted thermal radiation, while the ESP8266 processes this data and sends it wirelessly to a connected device or server.
- This setup ensures hygienic, efficient, and real-time temperature monitoring, ideal for applications in public health and safety.

Voice-Controlled Car | *ESP8266*

June 2024

- The voice-controlled car harnesses the power of a Bluetooth module to enable hands-free operation through voice commands. Users can interact with the car by pairing their smartphone or a compatible device via Bluetooth.
- Integrated with a microcontroller such as an Arduino or ESP32, the system processes voice commands received wirelessly. Commands like "forward," "backward," "left," and "right" control the car's movement, while additional functionalities such as speed adjustments or special maneuvers can be implemented based on the application's programming.
- This intuitive setup not only enhances user engagement but also demonstrates the integration of IoT and voice recognition technologies in modern vehicle control systems.

Whether Monitoring System | *Arduino, HTML/CSS, Python(Flask)*

September 2023

- The Weather Monitoring Project is a comprehensive system that employs advanced sensors, communication networks, and data analysis to gather, process, and disseminate real-time weather information.
- Its objectives include providing accurate weather forecasts and severe weather alerts, monitoring environmental factors, supporting scientific research, enhancing disaster preparedness, aiding sustainable agriculture, and facilitating climate adaptation efforts.

Health monitoring System | *ESP8266*

June 2024

- The health monitoring system integrates a MAX30100 sensor and an AD8232 module to measure heart rate and electrocardiogram (ECG) signals.
- The MAX30100 sensor detects pulse rate and blood oxygen levels through optical sensing technology, while the AD8232 module records ECG data by capturing the electrical activity of the heart.
- This system can wirelessly transmit the data to a smartphone or computer for continuous tracking and analysis, offering valuable insights into cardiovascular health for users and healthcare providers.

Smart Traffic Light System | *ESP8266*

June 2024

- The smart traffic light system features four distinct operational modes: Normal, Emergency, Night, and Off.
- In Normal mode, the traffic light follows standard timing sequences to manage traffic flow efficiently. The Emergency mode overrides normal operation to give priority to emergency vehicles, clearing the path for quick response times. Night mode adjusts the light sequences to lower traffic volumes, reducing unnecessary delays and conserving energy. The Off mode disables the lights when they are not needed, such as during maintenance.
- All modes can be conveniently controlled via a Bluetooth module, allowing for easy remote adjustments through a connected device, enhancing traffic management and response flexibility.

Smart Dustbin | *ESP8266*

June 2024

- The smart dustbin incorporates two ultrasonic sensors for enhanced functionality.
- The first sensor is positioned to detect approaching individuals, automatically opening the lid upon detecting motion within a specified range, ensuring touch-free operation and convenience.
- The second ultrasonic sensor monitors the fill level inside the bin, providing real-time data on its capacity. When the bin reaches full capacity, a buzzer activates to alert nearby users, signaling the need for emptying.
- This integrated system not only promotes cleanliness and efficiency but also enhances user experience by combining automation with timely notifications for effective waste management.

Technical Skills

Languages: Python, C, HTML/CSS, SQL, Verilog

Developer Tools: VS Code, PyCharm, Xilinx, Cadence, Multisim, EasyEDA Tool

Technologies/Frameworks: GitHub, VLSI

Non-Technical Skills

- Problem Solving
- Analytical Skills
- Multitasking
- Interpersonal skills

Cerifications

- Completed **Add-on course on OP-AMP Practical Applications.**
- Completed **Add-on course on Design Strategies of IC Design.**
- Attended **Hands on Workshop on Basics of IOT.**
- Attended **two days Hands on Workshop on IC Design using Cadence.**
- Attended **two days Hands on Workshop on PCB Designing.**
- Attended **one Month Internship on Embedded Systems with full Stack IOT at GTTC Hubli.**