Kartik Joshi

H. No. 538 (EWS), 3rd Cross, Navanagar, Hubballi - 580025
9986762025 kartikjoshi2025@gmail.com linkedin.com/in/kartiksjoshi24
github.com/KSJ2025 Portfolio/Kartik Joshi

Summary

Highly motivated Electronics Engineer with expertise in both hardware and software development. Proven ability to design embedded systems, digital systems, and PCBs. Possesses strong VLSI design knowledge and full-stack development skills with proficiency in SQL and Java. Eager to leverage this comprehensive skillset to contribute to innovative projects.

Education

KLS Vishwanathrao Deshpande Institute of Technology **Dec 2021 – May 2024**
Bachelor of Engineering in Electronics and Communication, CGPA - 8.08 *Haliyal, Karnataka*

K.L.E Society's C.I.Munavalli Polytechnic **July 2018 – Sept. 2021**
Diploma in Electronics and Communication, CGPA - 8.56 *Hubli, Karnataka*

Relevant Coursework

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

Projects

An intelligent farming for early disease detection using CNN | *Python, Thingspeak, AWS, OpenCV* **April 2022**

- Scored first position in the presentation and got selected for the second round for product development
- Framing has seen a number of technological transformations in the last decades, becoming more industrialized and technology driven.
- By using this project, framers will gain better control over the process of raising livestock and growing crops, making it more predictable and efficient.
- A CNN is a deep learning algorithm composed of multiple convolutional layers, pooling layers, and fully connected layers.

StudyMate: A One-Stop Academic Platform | *HTML, CSS, Python(FLASK), AWS* **October 2023**

- Created an Website using HTML,CSS and Python to enable seamless access to notes,textbooks and marks for students
- "StudyMate; A One-Stop Academic Platform" is a solution, for education that addresses the challenges faced by both students and administrators.
- This all in one platform streamlines the management of resources offering real time access to exam results, effective communication and efficient retrieval of learning materials.
- It features portals for administrators and students making content management easier while providing access to results and enhancing the user experience with timely notifications.

SolarGrow: Advancing Agriculture with Solar Smart Irrigation | *ESP8266* **July 2023**

- SolarGrow is an innovative project developing a smart irrigation system powered by solar energy and integrated with IoT technology.
- Utilizing soil moisture sensors, weather forecasting, and automated controls, SolarGrow optimizes water usage, reduces environmental impact, and enhances crop yields in agriculture.
- With its scalable design, mobile app control, and emphasis on sustainability, SolarGrow aims to revolutionize farming practices, offering an eco-friendly solution that addresses water scarcity challenges and promotes a more sustainable future for agriculture.

Application Controlled Robotic arm | *Arduino* **October 2020**

- Designed and built a prototype of 5-axis robotic arm with 5 degree of freedom
- Initiated the project by conceptualizing the application-controlled robotic arm to meet specific industry or personal needs.
- Ensured seamless communication between the application interface and the robotic arm through a microcontroller, utilizing industry-standard communication protocols.
- Utilized a user-friendly mobile or desktop application to control the robotic arm's movements, enabling users to manipulate its actions effortlessly.

Design and Implementation of 4 Bit ALU using Virtuoso | *Cadence* **February 2023**

- ALU or Arithmetic Logical Unit is a digital circuit to do arithmetic operations like addition, subtraction, division, multiplication and logical operations like and, or, xor, nand, nor etc.
- It is a 4-bit high speed parallel Arithmetic Logic Unit (ALU).
- Controlled by the 4 Function Select inputs (S0–S3) and the Mode Control input (M), it can perform all the 16 possible logic operations or 16 different arithmetic operations on active HIGH or active LOW operands.

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.

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.

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.

Water level indicator | *Arduino* **December 2020**

- It helps to control the valve by turning water flow on or off as required. The automatic water level controller minimizes the need for any manual switching and human interference
- The machine helps to detect level of water or any liquid. For this ultrasonic sensor is used.

Motion detection using PIR sensor | *Arduino* **March 2022**

- The objective of this project is to develop a motion sensor alarm based on a Passive Infra-Red (PIR). This project is aim to build a sensor system which is transmit and receive the signal.
- This project is about the motion detection using Infra-Red sensor in wirelessly. Besides that, it also acted as an auto power switching system. When the sensor is triggered, the signal will transmit wirelessly to take further action.

Fire Alarm Circuit Using IC 555 Timer and Thermistor | *Arduino* **June 2020**

- Fire alarms are prime necessities in modern buildings and architectures, especially in banks, data centers and gas stations.
- They detects the fire in ambiance at very early stage by sensing smoke or/and heat and raise an alarm which warns people about the fire and furnish sufficient time to take preventive measures.

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.

Technical Skills

Languages: JavaScript, Java, Python, C, HTML/CSS, SQL, Verilog
Developer Tools: VS Code,PyCharm, Ki-Cad, Xilinx, Cadence, Multisim, Arduino IDE, ThinkerCad
Technologies/Frameworks: GitHub, VLSI

Non-Technical Skills

- Problem Solving
- Analytical Skills
- Multitasking
- Interpersonal skills

Leadership / Extracurricular

IEEE Student Branch Maestro **Winter 2023 – Winter 2024**

Chair person *KLS VDIT*

∗ In my role as the IEEE chair for the student branch, I held a position of great responsibility and played a pivotal role in enhancing the academic experience of my peers.
∗ As a dynamic leader, I spearheaded the organization and coordination of a diverse array of technical events, workshops, and guest lectures.
∗ These initiatives were meticulously designed to provide students with opportunities for hands-on learning, exposure to cutting-edge technologies, and insights from industry experts.

Cerifications

- Completed **Add-on course on OP-AMP Practical Applications**.
- Completed **Postman Classroom Program conducted at NITK Surathkal.**
- 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.**