

# MUBENDIRAN K

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## Executive Summary

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Electronics and Embedded Systems Enthusiast with hands-on experience in microcontrollers, sensors, and embedded programming. Proficient in C, Python, and Linux scripting, with knowledge of AWS IoT and cloud technologies.

## Skills

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**Programming Languages:** Python, C, Linux Scripting

**Embedded Systems:** Arduino, ESP32, Microcontroller Programming

**Development Tools:** GitHub, Arduino IDE, Visual Studio Code (VS Code)

## Projects

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### ShopSense (Mar 2024 - May 2024)

[GitHub Link](#)

- Developed an RFID-based navigation system to assist visually impaired shoppers in navigating stores independently.
- Utilized tactile paving, RFID tags, and an audio interface to provide real-time product details.
- Enabled blind users to access product information through tactile markings and RFID-enabled devices.
- The project has been successfully patented

**Technologies Used:** RFID, Arduino, Microcontroller, Tactile Paving, Audio Interface

## Mini Projects

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### Automatic Temperature and Water Controlling System (09 Aug 2024 - 09 Sep 2024)

[GitHub Link](#)

- Designed a system to monitor and control temperature and water levels via sensors.
- Automated cooling and water regulation using a servo motor/electronic valve.
- Controlled cooling and pump operation based on real-time sensor data.
- Simulated and validated functionality using Tinkercad.

**Technologies Used:** Arduino, Temperature Sensor, Water Level Sensor, Tinkercad

## Internship

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**Acmegrade, Chennai**

**Intern - Embedded Systems**

Jul 9th, 2024 - Sep 9th, 2024

- Strengthened foundation in embedded systems through hands-on experience.
- Worked on an Automatic Temperature and Water Controlling System using real-time data processing.
- Gained expertise in microcontroller programming, sensor interfacing, and actuator control.
- Developed skills in embedded software, hardware integration, and troubleshooting.
- Applied theoretical concepts to real-world problem-solving.

## Education

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**Rajalakshmi Institute of Technology**, Chennai

Bachelor of Engineering (B.E.) in Electronics and Communication Engineering

Jan 2023 - May 2027

CGPA: 7.5

**Core Member at Energy and Mobility Centre**

**ARLM Matriculation Higher Secondary School**, Cuddalore

Higher Secondary, Computer Science

Jun 2009 - May 2023

Grade: 82%

**Former JRC Member**

## Certifications

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**Arduino - GUVI**

**Embedded Systems Training - AcmeGrade**

**Getting Started with AWS IoT - AWS**

**Fundamentals of Cloud Computing - UpGrad**

**Linux Tutorial - Great Learning**

## Appreciation Certificates

**First Prize - Code Debugging 2024, Rajalakshmi Institute of Technology**

**First Prize - Code Relay 2024, Rajalakshmi Institute of Technology**

## Patent

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**ShopSense - RFID-based Navigation System for the Visually Impaired**

**Patent Status:** Issued

**Patent Number:** 202441079718

**Date of Issue:** October 25, 2024

Designed and patented an RFID-based navigation system to assist visually impaired individuals in shopping independently. The system enhances accessibility by integrating RFID technology with an audio interface, providing real-time product information and navigation support.

## Volunteering Experience

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**Junior Red Cross (JRC) Camp** – Government School, Cuddalore

**Role:** Volunteer

**Impact:** Benefited over 200 students

- Led a school-wide cleanup initiative, improving the learning environment.
- Assisted students by providing essential utilities and support.
- Conducted awareness sessions on fire safety, food consciousness, and first aid, ensuring students gained practical knowledge on critical safety measures.
- Promoted health and hygiene awareness, fostering a safer and more informed school community.