



## THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt. Aided, ISO 9001:2008 Certified, Autonomous Institution Affiliated to Anna University)

Contact Address: C/o The Placement officer, Thiagarajar College of Engineering, Madurai – 625015

Telephone : +91+452+2482240/1/2  
Fax : +91+452+2483427

email :[placement@tce.edu](mailto:placement@tce.edu)  
Website : [www.tce.edu](http://www.tce.edu)

### RESUME

Name : EMRALD REGIN H R



Reg No. : 2303917710521030

Degree : B.E (ELECTRICAL AND ELECTRONICS ENGINEERING)

### CAREER OBJECTIVE

Innovative EEE student specializing in IoT, Embedded Systems, and AI, with a proven track record in hackathons, research, and leadership. Passionate about developing cutting-edge solutions for real-world problems.

### ACADEMIC RECORD

COURSE / CLASS	NAME OF THE INSTITUTION	BOARD OF STUDY	YEAR OF PASSING	CGPA / MARKS %
B.E (EEE)	Thiagarajar College of Engineering, Madurai.	Anna University, Chennai	2027	9.51*
XII	Carmel Higher Secondary School , Nagercoil	State Board	2023	92.33
X	Carmel Higher Secondary School , Nagercoil	State Board	2021	pass

\* CGPA (out of 10) up to IV semester

### AREAS OF INTEREST

- Embedded Systems & IoT Development for human welfare
- AI/ML for Energy Management and real time electrical problems
- Microcontrollers
- Hackathons & Innovation Challenges

### TECHNICAL SKILLS

- Programming Languages : Basics of Python, MATLAB, C, C++, Java, HTML
- Tools : MATLAB, Proteus, KiCad, AutoCAD Electrical, easyEDA, Keil, Processing PDE, Arduino IDE, Crikit designer, PSIM/MULTISIM

### PERSONAL SKILLS

- Leadership & Team Collaboration
- Public Speaking & Problem-Solving
- Adaptability in Multidisciplinary Projects
- Effective communicator
- Research-Oriented Mindset

## PROJECTS

### 1. Digi Decelerator - Vehicle Speed Control System (EDII Hackathon)

- Developed an RF-based speed control system using ESP32 and RFID technology for road safety applications
- Implemented a relay-based mechanism to dynamically control motor speed in response to RFID signals
- Built and demonstrated a fully functional prototype that won 2nd place in IDEA HARVEST by Titan

### 2. Resonix - Safety Device for Hearing Impaired (Design Thinking Project)

- Created a smart wristband using ESP8266 and MAX4466 microphone to detect emergency sirens
- Integrated real-time vibration alerts and notification systems for caregivers
- Selected for demonstration at IIC, TCE-TBI, and E-Cell events

### 3. Near Work Monitor System (ACEi Hackathon with Aravind Eye Hospital)

- Designed an IoT-based solution using ultrasonic sensors and ESP32 to monitor working distances
- Implemented real-time alerts and mobile notifications to help reduce eye strain
- Collaborated with ophthalmologists to refine the system for practical use

### 4. Smart Household Energy Audit App (Energathon '24 - 3rd Prize Winner)

- Developed an Android application for monitoring household energy consumption
- Created an intuitive user interface to track and optimize energy usage
- Presented the solution to industry professionals and faculty mentors

### 5. NeuraWatt - AI-Powered Energy Meter (EEE Hackathon - 3rd Prize Winner)

- Built an intelligent energy meter prototype with predictive capabilities
- Implemented budget alerts and mobile notifications for energy consumption
- Developed functionality to forecast future load patterns

### 6. Ultrasonic RADAR System (TCE-TBI Internship Project)

- Designed a short-range obstacle detection system using ultrasonic technology
- Developed a cost-effective solution using Arduino IDE and Processing PDE
- Implemented the system with C++ and Java programming

### 7. Sound-Based Machine Health Monitoring (TCE Industries Hackathon)

- Created an AI-driven system to analyze machine health through audio signals
- Implemented ML models to detect anomalies and predict potential failures
- Optimized the solution for low-latency deployment in industrial settings

### 8. Deepfake Detection System (KPR Hackathon)

- Developed a deep learning model to identify manipulated media content
- Trained the system using diverse datasets to recognize various deepfake techniques
- Achieved high accuracy in the competition's evaluation framework

## INTERNSHIPS

### **ISRO IPRC Internship | 2 Weeks**

Assisted in aerospace propulsion system analysis.

Witnessed the real engine tests

### **JBJ Scientific Internship | 2 Weeks**

Developed IoT-based sensor calibration prototypes for industrial applications.

Assembled experimental lab kits for educational demonstrations.

### **In-Lab Internship (TCE) | 2 Weeks**

Gained proficiency in MATLAB programming and simulation techniques.

Learned fundamentals of C/C++ for embedded systems development.

### **TCE-TBI Internship (Ongoing)**

Developing ultrasonic RADAR system for obstacle detection in rural areas.

Implementing cost-effective solutions using Arduino and Processing IDE.

### **Research Projects (Ongoing)**

NILM: Non-intrusive load monitoring with AI.

DSM: Demand-side management for smart grids.

## CERTIFICATIONS

- MATLAB Onramp – MathWorks
- Introduction to Symbolic Math with MATLAB – MathWorks
- Statistics Onramp – MathWorks
- Simscape Onramp – MathWorks
- Simulink Onramp – MathWorks
- Diploma in Programming (Completed on 06/04/2023)

## LEADERSHIP EXPERIENCE

- **Class Representative**, I Semester  
Thiagarajar College of Engineering |  
2023.
- **IITM Build Club** – Vice President  
( Jul 2025 – Present )
- **IETSE Student Member** (Feb 2025  
– Present)
- **IAEMP Joint Treasurer** (Oct 2024  
– Present)
- **IEI Student Member** (Sep 2024 –  
Present)
- **IITM Build Club Core Member**  
(Jul 2024 – Jul 2025)
- **IoT Club Student Coordinator** (Jul  
2024 – Present)
- **CDC Coordinator** (Aug 2023 –  
Present)

## ACHIEVEMENTS

- 2nd Place – IDEA HARVEST by Titan (Digi Decelerator)
- 3rd Prize – Energathon '24 (Smart Energy Audit App)
- 3rd Prize – EEE Hackathon (NeuraWatt)
- Finalist – EDII hackathon by Govt. TN (Digi Decelerator)
- Finalist – ACEi Hackathon (Near Work Monitor System)
- Finalist – Demo Day (Resonix Project)
- Finalist – Sastra TBI hackathon (AI sign language interpreter)
- Finalist – KARE hackathon (Resonix Project)
- Finalist – TCE industries hackathon (sound - machine health monitoring)
- Finalist – KPR hackathon ( Deepfake detection )
- Finalist – Cyber hackathon (Police Chatbot & Advanced parking system)
- Smart India Hackathon\*
- MSME\*

\*ongoing

## VOLUNTEERING

- Department and club event coordinator
- Organized six Build Club events
- Organized three IoT Club events

## EXTRA-CURRICULAR

- Chess player in College level

## **PERSONAL DETAILS**

### **CONTACT ADDRESS**

C/O The Placement Officer,  
Thiagarajar College of Engineering,  
Thiruparankundram,  
Madurai – 625015  
**Email:** placement@tce.edu  
**Telephone:** +91 452 2482240

### **PERMANENT ADDRESS**

S/O Haise Raja Singh,  
5,Knill street,  
Near WCC,  
Nagercoil-629001.  
**Email:** [emraldreginhrofficial@gmail.com](mailto:emraldreginhrofficial@gmail.com)  
**Mobile:** +91 9940896003

**Date of Birth:** 27.03.2006

**Age:** 19

**Sex:** Male

**Father's Name:** Haise Raja Singh I

**Mother Tongue:** Tamil

**Languages Known:** Tamil, English (Both)

I, **EMRALD REGIN H R** do hereby confirm that the information given above is true to the best of my knowledge and belief.

**Place:** Madurai

**Date:** 17/07/2025

**Signature**