V.G.YASHWANTH KUMAR

B. Tech - Instrumentation and Control Engineering
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Educational Qualification

Year	Degree/Examination	Institution/Board	CGPA/Percentage
2020-Present	B.Tech- ICE	NIT-Tiruchirappalli	8.26
2019	Class XII	10321-Narayana Junior College, Raaga Mayuri Buildings, Nannur-Kurnool, State Board	974/1000
2017	Class X	National English Medium High School, Kanekal, State Board, Anantapur (Dist.)	9.8/10

Internship Experience

- **Summer Internship in NIT Tiruchirappalli**: *May 2023 - July 2023*
  Research Internship under Professor **Dr D. Ezhilarasi's** guidance in the **Embedded Systems lab**. The scope of the internship was research on **Exoskeleton** and building an Exoskeleton prototype for the Lower limb. In that project, we controlled the BLDC motor for limb position orientation for Exoskeleton. We used **Modbus-RTU** serial communication protocol and Arduino to control the BLDC motor with a Modbus Supportable driver (**RMCS3001**).

Projects

- **Digital Door Lock Security System:** *Dec 2022*
  Implemented a password-based Door lock security system using an **AVR-Atmega 328p** microcontroller, **4x4 matrix keypad** and other peripherals. Using the keypad, we enter our password, the status of the password (correct or wrong), Door status (open or close) shown on a **16x2 LCD**. We can change to a new password by using the old one, and we used the inbuilt **EEPROM** of the AVR-Atmega328p microcontroller to store the password. We used a servo motor for the door actuator and some push buttons to control the system. We used **Wokwi** online simulator to simulate the circuit design and code.

- **Alarm:** *July 2022*
  Implemented an alarm that uses **Digital Electronics (Synchronous Counters)** to generate an alarm from 10min to 50min. It uses **seven segment displays** to show the current time in minutes, including seconds. When it reaches our set time, the buzzer will turn on. The alarm time resets to zero using a reset button, and it can be set to anytime between 10min,20min,30min,40min, and 50min, **Proteus** was used for simulation.

- **Calculator:** *Jun 2022*
  Implemented a calculator that uses **Digital Electronics (Combinational Logic Circuits)** to add and subtract two single-digit decimal numbers and produces output in decimal form using **seven-segment displays**. And it represents negative results along with negative sign. This circuit can be modified into a **subtractor** or **adder** based on the mode pin. For giving inputs, **10-4-line encoders** were used, and **Proteus** was used for simulation.

- **Delivery robot (prototype):** *May 2022*
  Implemented a robot that uses **AVR-Atmega328p Microcontroller (Arduino)** to make an Auto-delivery process using line detection principles with **IR sensors**. The robot loads goods at the initial point. Following the line using IR sensors, the robot reaches the destination point, unloads the goods, and returns to the initial point for subsequent delivery. The microcontroller was programmed using **Embedded-c**. **Proteus** was used for simulation.

- **Tri-copter:** *Nov 2021*

. Implemented a Tricopter to analyse the essential difference between Tricopter and Quadcopters regarding their energy consumption, weights, and balancing ability. We used the kk2.1.5 flight controller board, with ten channel receivers and a transmitter for controlling the Tricopter.

Technical Skills and Certifications

- Programming Languages : C, Verilog.
- Engineering Software : Tina, LT-Spice.
- Other Software : Visual Studio, Proteus, Keil-MicroVision5, Atmel Studio, Arduino ide.
- Certifications : 8051-Microcontroller (Smart Knowers Online), C- programming for Embedded Applications (Linkedin)

Positions of Responsibility

- **Member, 3D-Aeromodelling club of NIT Trichy:** *Jan 2021 - Present*
  Member of the 3D and Aeromodelling Club, the official Aeromodelling club of NIT-Trichy. The prime focus of the club is to take up competitions related to airborne vehicles. As a team, we conducted workshops on Drone Simulation, Image Processing and Embedded systems for the first and second years. We are currently working on a project involving autonomous navigation. My role is doing electronics-related projects in both airborne vehicles and robots.

Extracurricular Activities

Sports Activities:

- Participated in Marathon in **Sportsfete'2023-** the inter-department sports fest organised by NIT Trichy.
- Participated in Tennis Men in **Sportsfete'2023**- the inter-department sports fest organised by NIT Trichy.