SANDHYA DURGA V

PROFESSIONAL SUMMARY:

Engineer with experience designing robust software & hardware IOT systems to solve a variety of problems in different fields such as ambiance lighting, hydroponics, security Systems, assert monitoring, building automation, vehicle tracking, utility management, BLE Sensor Beacons.

PROFESSIONAL PROFILE:

- Has 5 years of experience in embedded software development
- Hands on experience in programming languages **Embedded C and Assembly Languages**
- Experience with Wireless Communication inbuilt **Microcontrollers**
- Good exposure to all stages of **Embedded Development Life Cycle.**
- Successful analysis, debugging and problem-solving expertise.
- Possess good Communication Skills and ability to work either independently or in a Team.
- Good Interpersonal skills and keen to learn new Technologies.

EXPERIENCE HISTORY:

- Worked as Embedded Software Engineer for Jochebed Tech Solutions LLP. from JUNE 2016 to Oct 2021
- Worked as Field Application Engineer for Hogar controls Pvt ltd from oct 2021.

Skill Set:

Languages	Embedded C, C++
Protocols	SPI, I2C, UART, TCP IP, UDP
Microcontrollers	ESP32, ESP8266, A9G, Arduino
Network Modules	Wi-Fi, Lora, Gsm Gprs, BLE, Zig-Bee
Operating system	Windows, Linux
Compilers & Debuggers	Esp SDK, Arduino IDE & Esp Exception Decoder, A9G SDK, Stm Rtos
Version control Tool	SVN

EDUCATIONAL QULAIFICATIONS:

- **M.Tech (Embedded and VLSI)** from kakinada institute of engineering and technology forwomen(JNTUK University),Kakinada in 2016.

- **B. Tech (ECE)** from kakinada institute of engineering and technology for women(JNTUKUniversity),Kakinada in 2011.

PROJECT #1:

Project Title : **Ambiance Lighting**
Client **:** Bajaj Lighting.
Role : Software and Hardware Developer.
Team Size **4**
Tools **:** Esp32 SDK, Esp IDF,C/C++.
Hardware **:** ESP32 32-bit microcontroller, RGB Led lights, PWM Led Drivers.
Protocol **:** Mesh Protocol, UDP protocol, MQTT for Cloud connectivity.

Description:
Ambiance product is a Hue control of RGB Led lights using a mobile application Locally or Remotely to the desired ambiance spectrum, Kelvin. Developed a mesh based spectrum controlling programmed PWM hardware using Mesh protocol for 100 devices Connectivity and MQTT for cloud Connectivity.

Responsibilities:

- Responsible for development of Software and Hardware.
- Unit Testing of developed components.
- Developing and Executing of test scripts.
- Involved in meetings and discussions with clients.

PROJECT #2:

Project Title : **Geo Based Drone**
Client **:** BVRIT.
Role : Software and Hardware Developer.
Team Size **4**
Tools **:**.APM Mission planner.
Hardware **:** APM2.8 flight controller, RF flight controller, Neo 7M GPS.
Protocol **:** ArduPilot.

Description:
Geo based Drone is a mobility device can be wirelessly programmed the required geo locations for logistic applications. Programmed APM2.8 flight controller using Mission planner for geo latitude, longitude and altitude for smoother movement of drone without obstacles.

Responsibilities:

- Responsible for development of Software and Hardware.
- Unit Testing of developed components.

PROJECT #3:

Project Title : **Automated Hydroponics**
SystemClient **:** Urban Kisaan.
Role : Software and Hardware Developer.
Team Size **4**
Tools **:** Arduino IDE, C/C++.

Hardware : ESP32 32-bit microcontroller, SIM 800L GSM module, DHT22(T & Hsensor),PH sensor, EC sensor.
Protocol : MQTT for Cloud connectivity.

Description:
Hydroponics Automated System is an automated system which maintains Temperature and Humidity by switching compressor and exhaust fans when real values are max. and min. threshold values and publishes the data to server to maintain data log for further plant growth analysis added with PH and EC sensor for remote monitoring of water concentration.

Responsibilities:

- Responsible for development of Software and Hardware.
- Unit Testing of developed components.
- Developing and Executing of test scripts.
- Involved in meetings and discussions with clients.

PROJECT #4:

Project Title : **Water Meters(Flow measurement)**
Client : Greene meters.
Role : Software Developer.
Team Size **5**
Tools : Arduino IDE, C/C++
Hardware : ESP32 Wi-Fi inbuilt 32-bit microcontroller, LORA wireless module.
Protocol : Mqtt protocol for cloud communication.

Description:
This device measures the flow quantity of water and sends data to a data collector wirelessly and that data collector sends the collective data from different meters and feeds it to the server for further analysis.

Responsibilities:

- Responsible for development of Software.
- Unit Testing of developed components.
- Developing and Executing of test scripts.
- Involved in meetings and discussions with clients.

PROJECT #5:

Project Title : **Building Automation**
Client : BMS companies
Role : Software Developer.
Team Size **5**
Tools : Arduino IDE, C/C++
Hardware : ESP32 Wi-Fi inbuilt 32-bit microcontroller
Protocol : HTTP and Mqtt.

Description:
Developed a Wi-Fi cloud connected switch nodes and sensor nodes for automatic operations of electrical appliances as per the ambiance and environment majorly scheduling operations as per the environment requirements for a building infrastructure company.

Responsibilities:

- Responsible for development of Software.
- Unit Testing of developed components.
- Developing and Executing of test scripts.
- Involved in meetings and discussions with clients.

PROJECT #6:

Project Title : **Security Systems**
Client **:** Epick Bikes, Narayana Educational Institutions, Red Carrot.
Role : Developer and Testing Engineer.
Team Size **5**
Tools **:** Arduino IDE, C/C++
Hardware : ESP32 32-bit microcontroller, GSM Sim 800l and GPS Modules
Protocol **:** MQTT for Cloud connectivity.

Description:
Developed a GSM and cloud based customizable hardware for interfacing different type of sensors as per client requirement like magnet disengage sensor, smoke detector, ir proximity, movement sensing, CC-camera IP based and any other sensors can be integrated as per client requirement. The other products included in this category are GPS-Trackers, Fuel-Tracking, Assert Management and E-Bike lock.

Responsibilities:

- Responsible for development of Software and Hardware.
- Unit Testing of developed components.
- Developing and Executing of test scripts.
- Involved in meetings and discussions with clients.

PROJECT #7:

Project Title : **AC-Automation**
Client **:** Reliance Retail Stores, Happy Mobiles, Apollo Pharmacy.
Role : Developer and Testing Engineer.
Team Size **4**
Tools **:** Arduino IDE, C/C++

Hardware : ESP32 32-bit microcontroller, LoRa, GSM Sim 800l and GPS Modules
Protocol **:** MQTT for Cloud connectivity.

Description:
Developed a LoRa based hardware and of sensor nodes, switching nodes and data collectors for optimizing power utilization by HVAC, Split AC, as per the occupancy and temperature presence at premises operating automated and scheduled way as per the requirement for some of the retail chain stores in Hyderabad. The same category includes BLE Beacon Sensors for low power applications which runs on batteries.

Responsibilities:

- Responsible for development of Software and Hardware.
- Unit Testing of developed components.
- Coordinating with backend and mobile app teams for API integrations.
- Involved in meetings and discussions with clients.

PROFILE:

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DECLARATION:

I, hereby declare that the above furnished information is correct and true to the best of my knowledge andI feel the responsibility for the correctness of the above mentioned particulars.