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ranit-pradhan

Ranit Pradhan

Summary

Looking for a position in the field of Embedded Systems and IoT development where I can utilize my skills to work towards personal and professional development and contribute towards the prosperity of the organization. I am highly motivated and eager to learn new things.

Education

2019-2023 Ongoing — **B.Tech in Electrical and Computer Engineering**, *Amrita Vishwa Vidyapeetham*, Kollam, Kerala, India.
CGPA: 7.9/10

2019 — **Belda Gangadhar Academy**, Paschim Medinipur, W.B., India.
Percentage: 78.93%

2017 — **Jankapur High School(H.S)**,), Paschim Medinipur, W.B., India.
Percentage: 86.14%

Experience

January 2023 to Present — **IoT Hardware Security Research Intern**, *Payatu*.
- Hardware Protocols(UART,SPI,I2C,JTAG), Wireless Protocols(Bluetooth, Wi-Fi, ZigBee)
- Tools- ExpLIoT Nano, Diva board, ZigBee Auditor.

Page link: `https://payatu.com`

June 2022 to July 2022 — **Summer Intern at CeNSE**, *Indian Institute of Science*.
- Pressure sensor data acquisition and Visualization using IoT.
- Tools- Raspberry Pi 2B, ADS115, MCP3553, InfluxDB, Grafana.

Page link: `http://www.cense.iisc.ac.in`

June 2022 to July 2022 — **IoT Internship**, *Emertxe Information Technologies*.
- Foundational Skills – C & Linux.
- IoT Skills - IoT Architecture, IoT Cloud Platform, IoT Solution Integration
- Embedded Skills - Micro-controller programming
- Tools - Debuggers, Cross-compilers, Editors and many more

Page link: `https://www.emertxe.com`

December 2020 to December 2022 — **Member at Team bi0s**, *Amrita School of Engineering*.
- Participated in various CTFs like Mitre, CSAW, Defcon etc.
- Currently working on Embedded Security and Linux systems.
- Mentoring first and second year student members.

Page link: `http://bi0shardware.com`

November 2019 to January 2021 — **Member at IEEE, Kerala Section**, *Amrita School of Engineering*.
- Participated in IEEE Hackathons, Conferences, Webinars.
- Undergone a Machine Learning workshop sponsored by **Megara Robotics Pvt. Ltd**.

Certificate link: `https://raw.githubusercontent.com/RanitPradhan/Certificates/main/Certificate_Me.jpg`

Projects

July 2022 — **Real-Time Monitoring of CeNSE Developed MEMS Pressure Sensor**.
Data acquisition and real-time monitoring of a differential pressure sensor, manufactured in MEMS Packaging Lab of IISc.

October 2021 **Vaccine Verification using RFID-based secure authentication.**.
The aim of the project was to use RFID technology in the fight against Covid-19. By following the process we can verify one is fully vaccinated with a good health or not, besides it we also tried to include contactless temperature verification.

July 2020 **An Ultra-Portable Vis-NIR Spectrometer for Chemometric Applications**.
On-site material inspection and quality analysis of food and agricultural produce, which require portable sensing systems. A mini spectrometer is used for the measurements and the spectra data is analyzed using machine learning.

November 2021 **Accident Alert in Mist**.
STM32F103C4 microcontroller application for accident avoidance of vehicles in foggy areas. Simulation platforms like Proteus, STMCubeMX, ARM-Keil are used.

May 2021 **Staircase LED using PIC**.
Simple staircase LED controlling using **PIC16F877a** microcontroller. Simulation platforms - MPLAB and Proteus are used.

September 2020 **COVID-19 Alert Distance**.
This project is related to the recent pandemic situation of COVID-19. A replica model to alert human to keep safe distance from each other.

January 2020 **AC to 12V DC Converter**.
The primary objective of this project was to glow a 12V LED strip using AC to DC converter.

Courses and Mooc

May 2020 **The Arduino Platform and C Programming**.
Issuing Organization: *University of California,Irvine.*

April 2020 **Working with JSON Data**.
Issuing Organization: *Real Python*.

August 2020 **Data Visualization with Python**.
Issuing Organization: *Real Python* .

July 2021 **The Complete Front-End Web Development Course.**.
Issuing Organization: *Udemy* .

Volunteer

January 2015 **Science Exhibition Project-1**.
Contributed in a model explanation of an Automated railway alarming system if there is any fault on the train-line, on the Platinum Jubilee celebration of Jankapur High School(H.S)

January 2019 **Science Exhibition Project-2**.
Contributed in a model explanation of an Automated water level alarming system, on the Centenary celebration of Belda Gangadhar Academy

December 2019 **Crowd Control Volunteer**.
Volunteered for crowd control in our Chancellor, Mata Amritanandamayi Devi's Birthday celebration.

March 2022 **Organizing Holi Celebration**.
Core team member for the arrangements of Amrita University Holi Celebration 2022.

Internships and Workshops

October 2019 **Hacktoberfest 2019**.
Attended conference of Digital Ocean,an introduction to Git and GitHub. It is a two days workshop taken by amfoss student club every year.

October 2020 **Machine learning Internship, IEEE**.
An online internship based on Data Science and ML.
Certificate Link:
`https://raw.githubusercontent.com/RanitPradhan/Certificates/main/Certificate_Me.jpg`

Achievements

November 2021 **CSAW'21 Embedded Security Challenge Finalist India**.
Finalist for CSAW'21 ESC, India. Mostly challenges were based on Side Channel Attacks and Chipwhisperer Nano was used for the analysis.

October 2021 **Runner-Up in IEEE RFID-TA 2021 Challenge**.
Secured second place in this national ideathon with the topic **Vaccine Verification using RFID-based secure authentication**.

September 2017 **Paschim Banga Vigyan Mancha**.
Paschim Banga Vigyan Mancha award in 2009 and 2017 for getting 5th position in our district and 2nd position in my block respectively.

Coursework

Core Courses IoT, Embedded Systems, Microcontrollers and Applications, Electric Machines, Digital Electronics, Microelectronic Circuits

Lab Courses Microcontroller and Architecture, Data Structure, Power Electronics, Python Object Oriented Programming, Digital Manufacturing.

Languages

English Full Professional Proficiency

Hindi Full Professional Proficiency

Bengali Full Professional Proficiency

Odia Full Communication Proficiency

Skills

Languages Python, C, C++, SQL

Core Embedded C, AVR, Networking, Robotics

WebD HTML,CSS

VCS Git, Jupyter Notebook

Tools
- **Software** STM CubeMx, MPLAB, Arduino IDE, VS Code, MATLAB, LT Spice, Proteus, ARM-Keil, Logisim, Eagle CAD
- **Hardware** Arduino UNO, ESP(8266,32), Tiva C, RaspberryPi, Logic Analyzer, Sensors.

Soft Skills Team management, Leadership, Mentorship

Interests

Technical IoT, Embedded Systems,Firmware, Robotics, Machine Learning, Contributing to Open Source

Hobbies Travelling, Cricket

Personal Details

DOB 3rd August, 2000

Address Amritapuri, Kollam, Kerala, India

Status Student