West Bengal, India
+91 9382615195
pradhanranit0019@gmail.com
RanitPradhan.github.io
ranit-pradhan

Ranit Pradhan

Summary

Looking for a position in the field of Embedded Systems and IoT Security Research and 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: 7.8/10

2017-2019 — **Higher Secondary**, *Belda Gangadhar Academy*, Paschim Medinipur, W.B., India
Percentage: 78.93%

Experience

July 2023 to Present — **Associate IoT Security Researcher**, *Payatu*
- Wireless Security (BLE, Wi-Fi, ZigBee)
- Exploring in SDR
- Tools- ExpLIoT, Alpha AWUS036AC, ZigBee Auditor, GnuRadio.

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

January 2023 to June — **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`

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.

Skills

Languages	Python, C, C++, SQL
Core	Embedded C, AVR, Networking
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), RaspberryPi, Logic Analyzer, Sensors.
Soft Skills	Team management, Leadership, Mentorship

Projects

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.

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.

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

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

April 2022 **Audio Management System**
Lightweight desktop music player application using python frameworks**(postgresql,asyncpg,pysimplegui,psycopg2)**.

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.

Interests

Technical	IoT, Embedded Systems, Hardware Security, Firmware, Robotics, Contributing to Open Source
Hobbies	Travelling, Cricket