Roshan Yadav

Cybersecurity Enthusiast

About Me

I am Roshan Yadav, a student of CSIS at NITK, Surathkal. I'm passionate about Computer Security, specifically Cryptography & Network Security. I enjoy studying research papers and journals about recent development in science and technology.
Apart from academia, I love to spend my free time with nature and hangout with friends at local tourist places.

Education

1. **Master Of Technology** **Aug 2023 - June 2025**
   - **Institute :** NIT Karnataka, Surathkal
   - **Programme :** Computer Science & Information Security
2. **Bachelor Of Engineering** **July 2018 - May 2022**
   - **University :** Gujarat Technological University
   - **Institute :** Government Engineering College Dahod
   - **Programme :** Computer Engineering

Work Experience

1. **Cyber Security Engineering Intern** **May 2024 - Aug 2024**
   Garrett Motion Technologies Pvt. Ltd.
   - Studying the automotive cyber security standard ISO/SAE 21434.
2. **Web Developer** **Jan 2022 - April 2022**
   - Worked on college website.
   - Developed the modules to manage Faculties Roles, Placement Data, Role Accesses, and Passwords of new users.
   - Setup the E-mail server for sending computer generated passwords to new users.

Skills

Programming Languages : C++, C, Assembly, Python, Java, Javascript, PHP
Tools : Git, LaTeX, Docker, Virtualbox, Bash
Other Skills : Team Work, Technical Blog Writing, Technical Video Production

Projects

Database Firewall — Github

- A heuristic-based database firewall implemented in C++.

RBAC using OAUTH2.0 — Github

- A web app developed using HTML, CSS, JS and PHP to demonstrate RBAC using OAuth2.0.

RSS Feed Reader — Github

- Allows you to subscribe/view RSS feeds from different news sites at one single place. Implemented with features such as OAuth 2.0, CORS Policy, CSRF Protection, Session Handling Using JWT.
- Developed using Node.js, Express, and MongoDb as the database. It can further be improved by integrating better user experience features.

Web Proxy — Github

- It can intercept both HTTP as well as HTTPS traffic.
- Applied the concept of Multithreading, Socket Programing, TLS Resumption, SSL Handshake, Encryption, Certificates, Exception Handling etc.
- This tool can further be enhanced to be used as Ad Blocker, Traffic Filter, WAF, Monitoring etc.

Malicious QR Code Detector — Github

- A mini-project in JAVA, to detect malicious QR Codes. The main idea is that it will resolve the URL by scanning and decoding the "QR code" of a given image. And then checks the URL within its database of malicious links.
- It uses the ZXing library to read the "QR Code". ZXing ("Zebra Crossing") is an open-source, multi-format 1D/2D barcode image processing library implemented in Java. After resolving the "QR Code", it makes the Database connection with mySQL and then checks the URLs within its database of malicious links.

Multi-Client Chat Program — Github

- A simple text based multi-client chat program.
- It is based upon the client-server architecture. One program acts as a Chat-Server and allows many clients to connect with it.
- The users can join the chat server using the "SECRET" key and communicate with other clients present in the Chat-Room. The server manages all the clients and communication between them.
- I had applied the concept of Multithreading , Socket-Programming and Exception-Handling to build this small project.

LG-32LJ522D-IR-Remote — Github

- Built an IR Remote for LG TV Model-32LJ522D using Arduino Nano and IRremote library.
- This project got me learning about PWM and NEC protocols.

Gesture Controlled Computer — Github

- A project using Arduino-Nano, US sensors and Python.
- Using Ultrasonic sensors and Arduino it measures the distance between our hands and US sensors and based on that Arduino directs the Python program (Which continuously look for signals at Serial-Port) to send some control signals to the applications running on the system.
- The project had helped me to understand Microcontroller, Sensors, Serial Communication using Python and how all of this can be plugged together beautifully to accomplish a task.

Cryptography Algorithms — Implemented some of the Cryptographic Algorithms from scratch.

- Diffie-Hellman Key Exchange — Github
- RSA(Rivest, Shamir, Adleman) Algorithm — Github
- Vigenere Cipher — Github
- Caesar Cipher — Github

Community Involvement

1. **Google Site**
   - Published some notes that I have created while learning Reverse Engineering and Binary Exploitation.
2. **Youtube**
   - Produced some technical videos related to Information Security (e.g. Computer Network, Basics of Binary exploitation, Pico CTFs, Cryptography, Web Application Security, Projects etc.)

3. **Talks and Participation**

   - **NXT.Tech**
     - This 2-day event was organized by Senior Students of GEC Dahod (Our Batch) to share their experience and knowledge which they gained over the 4 years of engineering.
     - At this event I gave a talk on "Cyber Attack & National Security", basically I talked about how cyber attacks are a major threat for National Security and explained India's cyber defense architecture.
   - **Seminar on Function Call At Architecture Level**
     - This was a seminar that I had given to my classmates under the subject "Summer Internship".
     - Here, I talked about the "Data-Structure" requirement for the function calls, "Process-Image" in memory, "Stack-Frame" and demonstrated how function calls actually happens at the micro-processor level using a simple "C-Program" and "GNU disassembler".
   - **IoT (Extending The Power Of Internet)**
     - This was the presentation on the project "Google Assistant controlled switch" that we have built in a group of 4 Students. We demonstrated and explained the working principle of this project.
   - **FootprintsX10**
     - A National Level Technical Festival happens each year at MSU(Maharaja Sayajirao University) Vadodara, which started with a paper presentation event in 2001, and has now become the largest tech-fest of Gujarat.
     - I participated in an event named "Protocol" where I presented the topic "Discrete Mathematics and its applications in Computer Science". Here, I explained about "how Discrete Maths are being used to solve computer Science Problems?".

4. **Released Notes**

   - Linux Essential For Beginners
   - Python3 101
   - Learn Github

Languages

Hindi : Proefficient
English : Proefficient
Gujarati : Intermediate

Updated: June 18, 2024