KALAIYARASAN B

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About

I am Kalaiyarasan B, a Computer Science Engineering student at Karpagam Institute of Technology. I have a strong interest in cybersecurity and possess skills in securing digital systems, analyzing threats, and implementing security measures. Additionally, I am continuously expanding my knowledge in the field to stay updated with the latest advancements.

Education

B.E – Computer science and engineering **(2022– 2026)**

Karpagam Institute of Technology, Coimbatore.

Certifications

- Introduction to Cyber Security **January 2025**
- Network Security: ARP Spoofing - Hands-on (BCBUZZ Technologies) **February 2025**
- Data Base Management System (NPTEL, IIT Kharagpur) **September 2024**

Technical Skills

Cyber security: Vulnerability Assessment & Penetration Testing**,** Wireless Network Security**,** Red Team & Blue Team Operations**,** Web Application Security Testing, mobile application security.

Tools &platforms: Kali Linux , Metasploit Framework ,Wireshark ,Burp Suite ,Nmap ,Snort ..etc

Programming : java , HTML,CSS

Projects

Movie Recommendation System November 2024

Technologies Used: Python, Flask, HTML, CSS, Machine Learning (TF-IDF, Cosine Similarity), Pandas

- Developed a web-based movie recommendation system that suggests the highest-rated movies based on user-inputted genres.
- Implemented Natural Language Processing (NLP) techniques such as TF-IDF vectorization and Cosine Similarity to rank movies based on their descriptions.
- Utilized a dataset of IMDb's top-rated movies to ensure accurate and relevant recommendations.
- Built a Flask-based backend to process user queries and dynamically generate recommendations.
- Designed a user-friendly frontend using HTML and CSS for an intuitive experience.

Outcome: Successfully created an interactive recommendation system that provides personalized movie suggestions, enhancing user engagement and experience.

Source code: https://github.com/kalaiyarasan1919/movie-recommendation-system-

Smart India Hackathon 2024 – EMI/EMC Measurement System **September 2024**

Technologies Used: IoT, Microcontrollers (ESP32/Arduino), Wireless Communication (Wi-Fi, Bluetooth, LoRa), AWS IoT, Embedded C/C++, Signal Processing

- Developed a **portable, lightweight EMI/EMC measurement device** for analyzing **electromagnetic waves in metro railways**.
- Integrated **microcontrollers with EMI/EMC sensors and advanced signal processing** for real-time monitoring and accurate measurements.
- Implemented **wireless connectivity (Wi-Fi, Bluetooth, LoRa)** for seamless data transmission to IoT platforms like AWS IoT.
- Designed a **user-friendly interface** requiring no specialized skills for operation, enhancing accessibility.
- Focused on **cost-effectiveness, energy efficiency, and environmental adaptability**, making the solution viable for large-scale deployment.

Outcome: Created an innovative, **real-time EMI/EMC analysis tool** that improves railway safety, prevents system failures, and optimizes energy consumption.