# SATHARAKA NILMANTHA

## SOFTWARE ENGINEERING INTERN

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## ABOUT ME

I'm a Computer Engineering undergraduate passionate about building innovative, efficient, and scalable solutions. I focus on leveraging technology to solve real-world problems effectively while continuously expanding my knowledge in emerging technologies.

## EDUCATION

**BSc. Engineering (Hons.) in Computer Engineering**                    **Apr 2022-Present**

*University of Jaffna, Sri Lanka*

Relevant Coursework: Software Engineering, Object-Oriented Programming, Database Management Systems, Computer Networks & Security, Operating Systems, Computer Architecture, Embedded Systems Design, Data Structures & Algorithms, Machine Learning, Deep Learning, Artificial Intelligence, Advanced Networking.

**G.C.E. Advanced Level – Physical Science Stream**                    **2017-2020**

*Dhammissara National College, Nattandiya*

Results: A – Combined Mathematics, B – Chemistry, C – Physics

## PROJECTS

**HealthHub – Smart Hospital Management System**  ⬡                    **Jan 2025 - May 2025**

*Tech Stack: Java Spring Boot, React.js, MySQL, Bootstrap, Postman, Jira*

- Contributed to full-stack development of a role-based hospital management system using Java Spring Boot and React.js, including admin employee management and receptionist access to doctors' prescriptions
- Designed responsive UI for patients, doctors, admins, and receptionists; implemented real-time appointment booking and doctor prescription features
- Conducted manual and exploratory QA testing, validated APIs with Postman, and collaborated in Agile sprints tracked via Jira

**Smart Pet Feeder – IoT-Based Automated Feeding System**  ⬡                    **Jan 2025- May2025**

*Tech Stack: ESP32, C, React Native, Firebase*

- Developed an IoT pet feeder using ESP32 and C, with real-time food level monitoring via ultrasonic sensors and instant alerts through Firebase
- Built a React Native mobile app for remote control, feeding schedule management, manual override, and dynamic portion control with offline support
- Utilized Firebase backend services for scheduling logic, data storage, and device-user synchronization, with features to prevent food waste and overfeeding

**ProConnect – WebRTC Video Conferencing Application**  ⬡                    **Apr 2025**

*Tech Stack: WebRTC, Socket.io, HTML, CSS, JavaScript, Node.js, Express*

- Developed a video conferencing app with HD video/audio calls, screen sharing with audio, and real-time chat messaging.
- Used WebRTC for low-latency peer-to-peer media streaming and Socket.io for signaling and connection management with auto-reconnect.
- Built frontend with HTML, CSS, JavaScript and backend with Node.js for scalable and responsive performance

**BookMyDoctor – Doctor Appointment Booking Management System** 🔗 **Nov 2024 – Jun 2025**

*Tech Stack: Java Spring Boot, React.js, MySQL, Twilio, Bootstrap, bcrypt, File Handling, Chatbot Integration*

- Developed a web-based doctor appointment system with secure authentication (bcrypt), file handling, and responsive UI using Bootstrap.
- Integrated Twilio to send SMS notifications for appointment confirmations, cancellations, and reminders, including next-day alerts.
- Built admin features for managing appointments, doctor registration/activation, and sending patient notifications.
- Integrated a React-based chatbot to enhance user interaction—patients can chat with the bot to find doctor details such as specialization, availability, and contact info.

**Machine Learning-Based Intrusion Detection System for Public Wi-Fi Networks** **Jan 2025 – Present**

*Tech Stack: Machine Learning, pfSense, Mininet, Python, Network Security*

- Researching and developing a real-time IDS to detect Layer 2 attacks like ARP spoofing and MITM on public Wi-Fi using supervised ML algorithms
- Implemented model quantization for edge device deployment enabling low-latency inference and integrated a SmartIDS plugin with pfSense for live traffic analysis
- Simulated attacks with Mininet and benchmarked performance against Arp watch and Snort, enhancing skills in network security and real-time packet inspection

## SKILL

- **Programming Languages** : Java, Python, C++, JavaScript, HTML, CSS
- **Frameworks & Libraries** : React.js, Spring Boot, Node.js, Bootstrap
- **Databases** : MongoDB, MySQL
- **Tools & Technologies** : Git, Postman, Figma, Twilio
- **Network & Security** : Wireshark, WebRTC, pfSense
- **Soft Skills** : Team Collaboration, Problem Solving, Self-Learning, Leadership

## ADDITIONAL INFORMATION

Member of the School Athletic Team at Dhammissara National College, Nattandiya, where I participated in inter-school track and field events, demonstrating commitment, discipline, and teamwork. Additionally, I secured places in school-level art competitions and received certificates of excellence, highlighting my creativity, attention to detail, and artistic expression.

*Hobbies & Interests: Marathon Running, Playing Cricket, Drawing and Sketching*

## VOLUNTEERING EXPERIENCES

**IESL Student Member** **Jan 2023 – Present**

Student member of the Institution of Engineers, Sri Lanka (IESL), staying engaged with the engineering community and gaining exposure to professional practices, technical knowledge, and industry standards through events and resources offered by the institution.

## REFERENCES

**Dr. (Mrs.) J. Jananie**

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