

Jegatheesan Shanthakumar

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About Me

A Computer Engineering undergraduate proficient in React, Spring Boot, Python, and AWS, with hands-on experience designing and developing full-stack and AI-driven applications. Passionate about solving real-world problems through clean and efficient code, with project experience spanning web development, IoT systems, machine learning, and cloud-based solutions. Eager to learn, adapt, and contribute to impactful software projects in a collaborative environment.

Education

University of Peradeniya, Sri Lanka

Feb 2021 – Present

BSc Eng (Hons), Computer Engineering

Nelliady Central College

G.C.E A/L 2019: 3A

Jan 2017 – Jan 2019

Projects

Green-House-Automation [↗](#)

- Built an **IoT smart greenhouse system** using **ESP32** with sensors (DHT22, soil moisture, NPK) and actuators for automated irrigation and environmental control
- Developed a **React Native mobile app** and **Spring Boot** backend with **MySQL** for real-time monitoring, analytics, and remote device control
- Integrated **AWS IoT Core** using **MQTT** protocol for secure real-time device-to-cloud communication
- **Contribution:** Developed React Native mobile app, React admin dashboard, and Spring Boot backend APIs for user management and analytics.
- **Tech:** React Native, React, Spring Boot, MySQL, AWS IoT Core, MQTT, ESP32, C/C++, TypeScript

MIS for Non-Academic Establishment Division [↗](#) [↗](#)

- Web-based **Management Information System (MIS)** to digitize manual non-academic staff administration processes
- Supports staff records, recruitment, transfers, leave management, promotions, and retirements
- **Contribution:** Developed **React** frontend pages and **Spring Boot** backend APIs for staff workflows
- **Tech:** React, Spring Boot, REST APIs, MySQL, Java, JavaScript

Sign Language Recognition System [↗](#)

- Machine learning system to recognize and interpret **static and dynamic sign language gestures** to address communication barriers for people with disabilities
- Combined a **CNN** model for spatial gesture recognition and an **LSTM** model for temporal sequence modeling with a web application interface
- **Contribution:** Assisted in dataset collection, model training, and backend development using **Flask**
- **Tech:** Python, CNN, LSTM, Flask, React, JavaScript, HTML, CSS

Research Work

Hierarchical Hybrid Intrusion Detection System (Ongoing) [↗](#)

- Designed a **multi-stage intrusion detection system (IDS)** integrating network-layer and application-layer features using **parallel processing** to detect zero-day and unknown attacks
- Applied **unsupervised learning** for real-time anomaly detection and **supervised models** for intrusion classification, addressing limitations of sequential-layer detection approaches
- Developed a **fusion layer meta-learner** with **semi-supervised active learning** to intelligently combine outputs and enable continuous adaptation to evolving cyber threats
- **Tech:** Python, TensorFlow, PyTorch, scikit-learn, Pandas, NumPy, Wireshark, Git

Technical Skills

Programming Languages: Java, Python, C, JavaScript

Frontend Development: React, React Native, HTML5, CSS

Backend Development: Spring Boot, Flask, REST APIs

Databases: MySQL, MongoDB

Cloud and DevOps: AWS (EC2, RDS, IoT Core), Docker, Git

Machine Learning and Deep Learning: TensorFlow, Scikit-learn, Neural Networks, CNN, RNN, LSTM

Embedded Systems: ESP32

Development Tools: IntelliJ IDEA, VS Code, Postman, Jira

Certifications

Programming for Everybody (Python) – Coursera [↗](#)

Full-Stack Web Development Bootcamp – Udemy [↗](#)

Agile Project Management-Google – Coursera [↗](#)

Front End Development Libraries Certification – freeCodeCamp

Extracurricular Activities

Leadership: Student Forum President, Athletic House Captain, Cricket and Football Team Captain

Teamwork & Collaboration: Experience collaborating in team-based sports, group projects, and performing arts activities

Global Exposure: AIESEC Member

References

Prof. Roshan G. Ragel

Professor

Department of Computer Engineering

University of Peradeniya, Sri Lanka

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Dr. Asitha Bandaranayake

Head of Department

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