

# SHAWMICA SIVATHARAN

AI & Machine Learning Engineer Intern

Software Engineer Intern

Vaddukoddai, Jaffna, Sri Lanka, 40000

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## Profile Summary

Passionate Information Technology undergraduate at Rajarata University of Sri Lanka and aspiring Software Engineer Intern with a strong focus on Machine Learning. Proficient in Python, TensorFlow, PyTorch, and OpenCV, with hands-on experience integrating AI/ML models into real-world web and vision-based applications. Skilled in full-stack development (React, Django, MERN) and driven by curiosity to build data-driven, scalable, and human-centered AI solutions. Dedicated to crafting scalable, intuitive, and visually engaging web applications that deliver real-world impact with the problem-solving mindset. Eager to contribute to innovative projects, collaborate with industry experts, and grow as a versatile ML engineer.

## Education

### BSc (Hons.) in Information Technology

2023 – Present

Rajarata University of Sri Lanka

CGPA - 3.71/4

### Secondary Education

2006 – 2020

Jaffna College, Jaffna, Sri Lanka

Physical Science Stream (Advanced Level)

Mathematics-B, Chemistry-C, Physics-C

## Technical Skills

- **Programming Languages:** Python, Java, C, C++, JavaScript, SQL, Prolog
- **AI & Machine Learning:** TensorFlow, Keras, PyTorch, scikit-learn, OpenCV, Tesseract OCR, Hugging Face Transformers, RAG (Retrieval-Augmented Generation), MCP (Model Context Protocol)
- **Computer Vision:** OpenCV, cvzone, Pycaw
- **Data Analysis & Visualization:** Pandas, Numpy, Matplotlib
- **Frontend:** React.js, Bootstrap, Tailwind CSS
- **Backend:** Django, PHP, Node.js
- **Databases:** MySQL, MongoDB, SQLite
- **Mobile Development:** Kotlin, React Native, Java
- **Cloud & Development Tools:** Vercel, AWS, Docker, Firebase Hosting
- **Development Tools:** Postman, Git, GitHub, Jupyter Notebook, Figma, Canva
- **Other:** Data Structures, Algorithms, OOP, MVC Architecture
- **Soft Skills:** Problem-Solving, Communication, Teamwork, Leadership, Adaptability, Project Management

## Projects

### Student Grade Prediction Model | Artificial Neural Networks (ANN)

Jun 2025 – Aug 2025

- Led the development of an ANN-based model that predicts final student grades (A, B, C, F) using engineered features. Designed and optimized the neural network architecture while overseeing data preprocessing, feature engineering, and model evaluation as team leader. Built a system where students input study hours, credits, quiz scores, attendance, engagement, and missed deadlines, which are transformed into meaningful predictors for accurate grade classification.
- **Technologies Used:** Python, NumPy, Pandas, Scikit-learn, TensorFlow/Keras.

### Fungal Colony Analysis on Coconut Flesh | Image-Based Growth Study

Mar 2024 – Aug 2024

- Performed a 14-day image processing study to quantify black fungal growth on coconut flesh using controlled imaging and preprocessing techniques. Applied segmentation methods such as dilation, adaptive thresholding, and floodfill to isolate fungal regions and measure growth patterns.
- **Technologies Used:** Python, OpenCV, Matplotlib.

### Mathly | AI-Powered Multilingual Math Solver

Jul 2025 - Aug 2025

- Developed an AI tool that uses OCR to read printed equations, solves them with SymPy, and provides step-by-step explanations with multilingual voice output.
- **Technologies Used:** Python, OpenCV, Tesseract OCR, SymPy, gTTS.

- Built a hand-gesture-based presentation controller enabling slide navigation, annotations, erasing, and on-screen highlighting using OpenCV and cvzone's HandTrackingModule.
- **Technologies Used:** Python, OpenCV, cvzone.

**Hand Gesture Volume Control** | Computer Vision Interaction System

Jul 2024

- Built a real-time hand gesture-based volume controller using OpenCV for hand tracking and Pycaw for system-level audio control, enabling volume adjustment through finger-pinch distance.
- **Technologies Used:** Python, OpenCV, Pycaw.

**Gesture-Controlled Presentation Tool** | Computer Vision Slide Navigator

Jul 2024

- Built a real-time hand gesture-based slide presentation controller enabling slide navigation, drawing, annotation undo, on-screen highlighting, and picture-in-picture presenter view using **OpenCV** and **cvzone's HandTrackingModule**.
- **Technologies Used:** Python, OpenCV, cvzone.

**Space Invaders Game** | Python Arcade Shooter

May 2025

- Built a retro-style Space Invaders game featuring custom graphics, real-time controls, shooting mechanics, enemy movement, collision detection, and sound effects using Python and Pygame.
- **Technologies Used:** Python, Pygame.

**Enhancing Student Engagement in Video Conferencing Based Learning** | Machine Learning-Driven

Feb 2025 – Present

- Conducting research on an AI-driven intelligent education system aimed at enhancing real-time online learning through non visual engagement analysis. Developing student behavior clustering, personalized feedback, and adaptive question triggering models for live sessions.
- **Technologies Used:** React, Python, TensorFlow, PyTorch, Firebase, Streamlit, Zoom API, Google Colab, WebRTC, WebSocket.

**Certifications**

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- AI/ML Engineer - Stage 1 – CODL (SLIIT), 2025
- AI/ML Engineer - Stage 2 – CODL (SLIIT), 2025
- Machine Learning, Artificial Intelligence – Simplilearn, 2025
- Python Django 101 - Simplilearn, 2025
- Exploratory Data Analysis for ML – IBM, 2025
- Foundations of Project Management - CODL (UoM), 2024
- IEEE Xtreme 18.0 – Rank 72(885), 2024
- RUSL Xtreme 1.0 – First Place, 2024
- Xtreme Encode, IEEE Xtreme 18.0 Region 10, 2024
- INSL(North Central Province) – First Place, 2025
- Problem Solving (Basic) - Hacker Rank, 2024
- Java Programming - DMI Education, 2022
- Python Programming - CODL (UoM), 2023
- Front-End Web Development - CODL (UoM), 2023
- Introduction to Generative AI – AWS, 2025
- Microsoft Azure - Microsoft Learn Ambassadors, 2024
- API Beginner Path, API Testing Path - Postman Academy, 2025
- Agile Project Management - CODL (UoM), 2024
- Prolog Programming Course - Udemy, 2025
- NLP and Text Mining - Simplilearn, 2025

**Club and Societies**

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- Publicity Team Member - IEEE Student Branch of RUSL
- Student Member - IEEE, IEEE Computer Society, IEEE Women in Engineering
- Board of Prefects, Jaffna College

**Extra-Curricular Activities**

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- Grade 3 Music Theory - The Associated Board of the Royal Schools of Music
- Grade 3 Piano - The Associated Board of the Royal Schools of Music

**References**

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