HARSHA KARUNARATHNA

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I am a motivated Information Technology undergraduate pursuing a BSc (Hons) in Information Technology at BCI Campus, Sri Lanka, with a strong focus on Software Engineering. I am passionate about designing, developing, and maintaining efficient, scalable, and reliable software solutions, and I am seeking an opportunity to gain hands-on industry experience and grow into a skilled Software Engineer. My interests include full-stack development, software quality practices, UI/UX-aware development, and emerging technologies such as AI/ML, enabling me to build robust systems with both technical excellence and user-focused design.

Education

BCI Campus	Sri Lanka
BSc (Hons) Information Technology	2023 - Present

Vocational Training Authority	Sri Lanka
Information Communication Technology Technician	Completed 2022

CP/W Pannala Maha Vidyalaya, Walapane	Sri Lanka
G.C.E Advanced Level Examination – Commerce Stream [Index No: 84757884]	2022
G.C.E Ordinary Level Examination [Index No: 7721668]	2018

Certifications

University of Moratuwa

Certificate of Python for Beginners	Completed 2023
Web Design for Beginners	Completed 2023
Front-End Web Development	Completed 2023

Cognitive Class (Provided by IBM)

Python for Data Science	Completed 2025

SLIIT

AI/ML Engineer Stage 1	Completed 2025

Le Wagon

Introduction to UI/UX design	Completed 2025

Projects

Vintage Summer - E commerce Clothing (Group)

- Contributed to the development of a responsive e-commerce web application for buying and selling dresses, with a focus on frontend development and intuitive UI design using Figma. Implemented key user functionalities such as authentication, product browsing, search, add-to-cart, and checkout processes. Alongside development, carried out manual Quality tested by creating and executing test plans and test cases to ensure functionality and usability. Further enhanced system reliability by automating critical user workflows using Selenium WebDriver, improving test coverage and overall application stability.
- **Technologies:** HTML, CSS, JavaScript, PHP, SQL, Figma, Selenium WebDriver, TestLink

Soul of Lanka - Travel Booking management system (Group)

- Engineered a secure, full-stack Travel Management System (MERN) using React/TypeScript and Express.js, leveraging MongoDB for persistent data storage. The system features robust JWT authentication for three distinct user roles—User, Agent, and Administrator—and incorporates a responsive, role-based Admin Panel UI. Key backend contributions involved implementing secure password hashing (bcrypt) and integrating automated email notifications (Nodemailer) upon user registration, significantly enhancing overall system integrity and user experience.
- **Technologies:** React, Express.js, Tailwind CSS, MongoDB, Node.js, Typescript

Hospital Management System (Individual)

- Developed a desktop-based Hospital Management System with modules for user login, patient records, doctor profiles, and medical diagnosis. Implemented features to assign patients to doctors with scheduled times, and enabled doctors to view patient histories and diagnosis details. Designed the system to streamline hospital workflow, ensuring organized data handling and easy navigation for staff.

- **Technologies:** C#, .NET, SQL

Smart Beach Cleaning Robot (Bluvyn) – AI-Based *(Ongoing Project)*

- Designed and developing the core AI and software components of an autonomous beach-cleaning robot with a focus on intelligent waste detection and navigation. Implemented a Convolutional Neural Network (CNN) to accurately identify plastic waste on complex sand textures. Developed localization and movement optimization logic using Multiple Linear Regression (MLR) to enhance navigation accuracy. Collaborated with the robotics team to integrate AI decision-making with ESP32 microcontrollers and cloud-based monitoring for real-time data tracking.
- **Technologies:** Python, TensorFlow/Keras (CNN), Multiple Linear Regression, MicroPython, ESP32, AWS IoT Core, Next.

Spotify Song Trends Analysis System (PySpark) (Academic Project)

- Designed and developed a scalable data processing system to analyze large-scale Spotify music data using big data technologies. Built an end-to-end data pipeline with PySpark to load, validate, and clean structured CSV datasets containing over 30,000 song records. Implemented custom processing logic using RDD and DataFrame APIs to compute genre-wise popularity metrics and identify top songs and artists. Integrated statistical feature analysis on audio attributes such as energy, tempo, and loudness to support trend evaluation. Developed data visualization modules using Pandas and Matplotlib to present insights in a clear and interpretable format.

- **Technologies:** Python, PySpark (RDD & DataFrame API), Pandas, Matplotlib, Google Colab

Skills & Interests

- **Languages**: Python, Java, C#(basic)
- **Web Development**: HTML, CSS, JavaScript, Bootstrap, React, Tailwind CSS, Node.js, TypeScript
- **Database**: MySQL, MongoDB
- **Frameworks**: React, Angular
- **UI Design**: Figma
- **Tools**: Visual Studio Code, Visual Studio, IntelliJ IDEA, GitHub, Git, Jira

Soft Skils

- Innovative and Creative
- Leadership Qualities
- Teamwork
- Learner
- punctual
- Presenting and Communication

Leadership & Activities

Leo Club of BCI   Negombo, Sri Lanka
Director   2024-2025

Digital Minds IT workshop   CP/W/ Pannala
Leader & Coordinator   MahaVidyalaya.Walapane
                                                                                                                            2025

Non-Related Reference

Dr. Tharanga Rathnayaka
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Mr. Limantha Malika
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