

Pathum Madhusanka

+94 70 112 4454 | pathummadhusanka.dev@gmail.com | Sri Lanka

LinkedIn | GitHub | Portfolio

SKILLS

Programming Languages: Python, Java, TypeScript, JavaScript, C#, PHP, C, Rust

Frontend: React, Next.js, Astro, Tailwind CSS

Backend: Node.js, ASP.NET Core, REST APIs, JWT Authentication

Databases: PostgreSQL, MySQL, MongoDB, SQLite, Supabase,

AI / ML: Scikit-learn, NumPy, Pandas, Matplotlib, Seaborn, Hugging Face, LangChain, PyTorch, Ollama

DevOps & Cloud: Linux, Docker, Vercel, Render, Azure, AWS, n8n

Tools: Git, GitHub, Slack, Figma, Mailjet

WORK EXPERIENCE

Intern Software Engineer

Jun. 2024 – Dec. 2024

Neuratech Pvt. Ltd. ([LinkedIn](#))

- Contributed to a web hosting platform using PHP and JavaScript by fixing bugs and improving existing features.
- Implemented a currency conversion feature using jQuery, utilizing cookies to store and manage user preferences.
- Worked with the development team using GitHub and Slack, following agile practices within the SDLC.

EDUCATION

BSc (Hons) in Computer Science - Specializing in Artificial Intelligence

Sep. 2023 – Present

Faculty of Computing and Technology, University of Kelaniya

Sri Lanka

- Current GPA: 3.74

G.C.E Advanced Level Examination

2021

Combined Mathematics, Physics, Information and Communication Technology

- Z-Score: 1.5674

PROJECTS

RBAC SQL Assistant

- Next.js | TypeScript | PostgreSQL | Docker | Ollama
- Developing an AI-powered SQL assistant that converts natural language into structured database queries using a local LLM (Ollama).
- Implemented JWT-based role-based access control (RBAC) to enforce secure, permission-driven query execution.
- Designed a secure API layer with input validation and query constraints to prevent unauthorized or unsafe database operations.

Vehicle CO₂ Emission Prediction System

- Python | Scikit-learn | Pandas | Numpy | Matplotlib | Seaborn | Joblib
- Developed a machine learning pipeline to predict vehicle CO₂ emissions using structured automotive data.
- Executed end-to-end data preprocessing including cleaning, transformation, and feature engineering to prepare data for modeling.

- Built and optimized regression models through systematic hyperparameter tuning to improve prediction accuracy.

Drug Network Analysis System (Graph-based Intelligence Platform)

- **Rust | Tauri | Python | FastAPI | NetworkX | Scikit-learn**
- Built a desktop system to model and visualize suspect networks using a graph-based structure.
- Implemented incident-driven graph construction and real-time node-edge visualization in Rust (Tauri).
- Developed Python-based analytics for community detection and network analysis using NetworkX.
- Applied a lightweight ML model for risk scoring based on graph features using scikit-learn.

CAIMS – Chemical Asset and Inventory Management System

- **ASP.NET Core | C# | Razor Pages | Entity Framework Core | ASP.NET Core Identity | Azure SQL Server**
- Developing a full-stack system for chemical asset tracking, lifecycle management, and audit logging.
- Implemented role-based access control (RBAC) to enforce secure, permission-based inventory operations.
- Designed and optimized Azure SQL database schema for efficient storage, retrieval, and auditability.

HallEase – Event and Hall Management System

- **Next.js | Vercel | TypeScript | Supabase | Mailjet | Gemini API**
- Collaborative team project developed to streamline university hall scheduling, and event management processes.
- Integrated a Gemini-powered chatbot to assist users with hall availability queries and booking guidance.
- Designed and implemented a database-driven system using Supabase for efficient and real-time data operations.

CERTIFICATIONS

- Open Source Licensing Basics for Software Developers (LFC191) – The Linux Foundation
- Artificial Intelligence Foundations: Machine Learning – LinkedIn Learning
- Learning Git and GitHub – LinkedIn Learning

LEADERSHIP & ACTIVITIES

President - Free and Open-Source Software Community

2026

University of Kelaniya

- Leading and organizing developer summits, workshops, and hands-on training series on open-source technologies, while facilitating networking opportunities with industry professionals and academic experts to enhance student learning, collaboration, and career exposure.

Co-Chair - Accelerator 2025

2025

Computer Science Students' Association at University of Kelaniya

- Coordinated and managed a panel discussion on undergraduate personal growth, handling speaker communication, session flow, and event moderation to ensure smooth execution.

TEAMWORK & ACHIEVEMENTS

1st Runner-Up - IX 25 (UI/UX Design Competition)

2025

IEEE Student Branch at Informatics Institute of Technology

- Collaborated in a design team to develop an XR(Extended Reality)-focused UI/UX solution, creating interactive Figma prototypes and user flows with emphasis on usability, immersion, and accessibility.