

# Dilshan Arachchige

Software Engineer Undergraduate

Middeniya, Sri Lanka | [dilshan.t.arachchige@gmail.com](mailto:dilshan.t.arachchige@gmail.com) | +94 761 606 311 | [Linkedin](#) | [GitHub](#)

## Professional Summary

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Software Engineering undergraduate with hands-on experience in **designing, developing, and deploying scalable software applications** through academic and project-based work. Strong foundation in the **software development life cycle (SDLC)**, backend systems, **API design**, authentication, and modern application architecture. Demonstrates **analytical thinking**, problem-solving ability, and a commitment to writing **clean, maintainable, and efficient code**. Experienced in collaborating on team projects and adapting to new technologies to build functional and user-friendly solutions.

## Education

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### HND In Cybersecurity (OTHM Level 5)

Summerset Campus, Sri Lanka

2026 – Present

### BSc (Hons) Software Engineering

The Open University of Sri Lanka

2023 – Present

## Technical Skills

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- Languages:** Python, JavaScript (ES6+), TypeScript, Java, HTML5, CSS3
- Frameworks & Libraries:** FastAPI, Node.js, Express.js, React, React Native, Next.js, LangChain
- Databases:** MongoDB, PostgreSQL, MySQL, Firebase, Supabase
- Cloud & DevOps:** AWS (basics), Docker
- AI & Data:** LLM Integration, RAG Systems, Vector Databases (ChromaDB)
- Tools:** Git, GitHub, Postman
- Concepts:** OOP, Data Structures & Algorithms, MVC Architecture, RESTful APIs

## Projects

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### DocMind | AI-Powered Document Intelligence (RAG) System ([GitHub](#))

- Engineered** a full-stack **Retrieval-Augmented Generation (RAG)** system for secure, context-aware document Q&A.
- Built** a Next.js frontend and implemented JWT-based authentication using Node.js and Express for secure user access.
- Developed** a FastAPI AI microservice integrating **LangChain** with **VectorDB** (ChromaDB) for efficient semantic retrieval.
- Implemented** asynchronous document chunking and embedding to support large uploads and concurrent queries.
- Containerized** backend services with **Docker** and integrated locally hosted Llama 3.2 for private **LLM** inference.
- Tech Stack:** Next.js, Node.js, Express.js, JWT, Python, FastAPI, LangChain, ChromaDB, Llama 3.2, Docker

### CloudPDF | Cloud-Based Document Management Application ([GitHub](#) | [Demo](#))

- Developed** a full-stack cloud platform for high-volume PDF operations (merge, split, compress, convert, and protect), eliminating the need for local software installations.
- Architected** a responsive frontend using **Next.js (TypeScript)** with dynamic routing and Tailwind CSS to deliver a seamless, cross-device user experience.

- **Designed** a structured backend using FastAPI (Python) to handle secure, high-performance server-side PDF processing workflows.
- **Integrated** PyPDF2 and PyMuPDF for efficient file manipulation with optimized memory handling.
- **Containerized** backend services using Docker and managed images via Docker Hub to ensure consistent staging and production deployments.
- **Tech Stack:** Next.js (TypeScript), Tailwind CSS, Python, FastAPI, PyPDF2, PyMuPDF, Docker, Docker Hub

### QuantifyPro | Invoice & Quotation Management System ([GitHub](#))

- **Developed** a full-stack Invoice and Quotation management application using **Next.js (TypeScript)** and **Node.js** to streamline the generation and tracking of professional invoices and quotations.
- **Architected** a robust **Role-Based Access Control (RBAC)** system, implementing Super Admin and User tiers to secure sensitive financial data and restrict administrative features.
- **Integrated** **Firebase** for real-time database synchronization and secure user authentication, ensuring data consistency across concurrent sessions.
- **Engineered** secure **RESTful APIs** with **Express.js**, incorporating protected routes, comprehensive form validation, and advanced error-handling protocols.
- **Tech Stack:** Next.js, TypeScript, Node.js, Express.js, Firebase, Tailwind CSS.

### RemoveBG | AI-Driven Image Background Remove Application ([Github](#)| [Demo](#))

- **Developed** an AI-powered web utility for automated, high-precision background removal using **Next.js**, **Python** and **Fast API** Web Framework.
- **Integrated** the rembg ML library to perform intensive image segmentation tasks with optimized server-side processing.
- **Engineered** secure file upload protocols and robust error-handling to maintain system stability during large-scale image processing.
- **Designed** a production-ready, one-click interface that simplifies complex graphic design tasks through automated machine learning.
- **Tech Stack:** Next.js, FastAPI, Python, REST APIs, ML (rembg).

## Certifications

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### Foundation: Introduction to LangChain – Python

Issued: February 2026

Credential ID - 8j52sivty7

### Python Data Structures – Sololearn

Issued: January 2026

Credential ID: 639032095713774630

### JavaScript Intermediate – Sololearn

Issued: January 2024

Credential ID: CC-GE5FW3VL

### API Testing with Postman – Coursera

Issued: December 2023

Credential ID: ZT6VJUMS6QLK

## Soft Skills

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Strong problem-solving mindset, Collaborative team player, Clear technical communication, Fast learner, Detail-oriented