

# Dilshan Arachchige

Software Engineer Undergraduate

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## 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](#))

- Architected** a full-stack Retrieval-Augmented Generation (RAG) pipeline using **FastAPI** and **LangChain** to enable low-latency, context-aware Q&A.
- Implemented** asynchronous document processing (chunking and embedding) to handle large-scale uploads and concurrent user queries efficiently.
- Integrated ChromaDB** for vector indexing and semantic search, optimizing similarity retrieval to reduce response times under heavy loads.
- Containerized** the entire ecosystem using **Docker**, orchestrating the **API**, vector database, and **Ollama** services for seamless, reproducible deployment.
- Deployed Llama 3.2** for private, local LLM inference, ensuring data privacy and optimized memory usage within a containerized environment.
- Tech Stack:** Python, FastAPI, LangChain, ChromaDB, Llama 3.2, **Docker**, REST APIs

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

- Developed** a full-stack platform for high-volume PDF manipulations (merging, splitting, compression, convert and Protect pdf ), eliminating the need for local software.
- Architected** a responsive frontend using **Next.js (TypeScript)** and **Tailwind CSS** to ensure a seamless, cross-device user experience.

- **Engineered** backend microservices with **FastAPI**, integrating **PyPDF2** and **PyMuPDF** for secure, high-performance server-side file processing.
- **Containerized** the backend using **Docker** and managed images via **Docker Hub** to ensure consistent deployment across staging and production environments.
- **Tech Stack:** Next.js, TypeScript, FastAPI, Python, Tailwind CSS, **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 REST 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