

Gihan Ariyasena

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Education

University of Staffordshire

Bachelor of Science in Computer Science

(2025-2028)

Projects

UMAP Algorithm From Scratch | Python, Jupyter Notebook

(Mar 2026)

- Implemented a from-scratch version of the UMAP dimensionality reduction algorithm for learning and experimentation.
- Worked with mathematical intuition, nearest-neighbor style concepts, and low-dimensional embedding ideas instead of only using a library wrapper.
- Repository: github.com/Gihan526/umap-algorithm-from-scratch

Shell Chat | Bun, TypeScript, OpenTUI, TanStack Router, Socket.IO

(Feb 2026)

- Built a terminal chat application as a Bun monorepo with separate web and server workspaces.
- Developed a terminal UI frontend using OpenTUI and TanStack Router with generated file-based routes.
- Implemented a real-time backend with Socket.IO and a dedicated server entry point to support interactive messaging.

Repository: github.com/Gihan526/shell-chat

Achievements

Most Innovative Concept | Hemas AIthon

(2026)

Team QuadStack | Project: InsightQL

1st Place | APIIT Kandy Hackathon

(2025)

Team Optiq | Code Verse 2025

Technical Skills & Certifications

Languages: Python, JavaScript, TypeScript, SQL (PostgreSQL, MySQL), Bash, Rust

Frameworks & Libraries: React.js, Next.js, Node.js, Express, Tailwind CSS, Socket.IO

AI/ML & Data: Pandas, Scikit-learn

Databases: PostgreSQL, MySQL, SQLite, Redis

AWS Academy: Cloud Foundations

Key Strengths

- Full-stack application development with modern JavaScript and TypeScript tooling.
- Cloud deployment fundamentals and infrastructure work on AWS.
- Machine learning implementation with an emphasis on underlying mathematical intuition.
- Strong ownership in collaborative and time-pressured delivery environments.