

# SHESHAN BANDARA

## Senior Software Engineer - Full-Stack

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## PROFESSIONAL SUMMARY

Senior Full-Stack Software Engineer with **5+ years of experience** building scalable web platforms, **multi-tenant SaaS**, and **microservices** architectures, including systems that bridge software and hardware (biometric and streaming devices). Expert in **system design** (SOLID principles), **performance optimization**, and CI/CD pipelines, with hands-on depth in **React**, **Next.js**, **Node.js**, **Docker**, and **AWS**. Proven track record of turning complex requirements into production systems, accelerating delivery with **AI-augmented workflows**, mentoring developers, and owning end-to-end product delivery.

## PROFESSIONAL EXPERIENCE

### Eduscope Pvt Ltd | Senior Software Engineer

July 2024 – Present

- Architectural Revamp:** Led the migration of the Lecture Video Management System (LVMS) to a hybrid microservices architecture, replacing overnight video encoding with an instant-availability pipeline, **cutting lecture publish time from hours to seconds** while significantly improving scalability.
- Backend Services:** Architected services for video bookmarking and learning analytics with **adaptive streaming** via **NGINX VOD module** for seamless playback; **currently building AI-assisted smart-question generation** on top of the platform.
- Cross-Functional Collaboration:** Partnered with AI/ML, UX, and video-processing teams to align features with institutional requirements, supporting **adoption across 3+ university faculties** and **25k+ daily student streams**.
- DevOps Integration:** Established on-premises hosting with CI/CD pipelines utilizing GitHub Actions, streamlining operations and **reducing release cycles** from weekly to daily deployments.

### NEWNOP Pvt Ltd | Software Engineer

May 2023 – Feb 2024

- Full-Stack Leadership:** Spearheaded the development of Albashop (hotel job coordination platform) and Tickle (cleaning service SaaS), successfully **onboarding 50+ early adopters** during the pilot rollout.
- Frontend Architecture & UX:** Owned React frontend architecture for Albashop and Tickle on AWS, improving release stability by adding clearer state boundaries, usability fixes, **code reviews and Vitest/Playwright coverage** around critical pilot workflows.
- Team Mentorship:** Mentored 3 junior developers on React best practices, Git workflows, and rigorous code reviews, **boosting overall sprint velocity** by ~20% within 3 months.

### Eduscope Pvt Ltd | Associate Software Engineer

Jan 2021 – Sep 2022

- Product Development:** Developed the Eduscope Unified Media Station, a comprehensive lecture recording and streaming device featuring a customizable controller dashboard utilizing React, Node.js, MySQL, and GStreamer.
- API Design:** Deployed APIs for real-time recording and streaming, enabling institutes to **reduce setup costs by ~25%**.
- Award-Winning Contributions:** Contributed core features that scaled the platform into a multi-institute deployment, directly resulting in **NBQSA 2022 Gold and Silver Awards**.

### Lucidex Pvt Ltd | Software Developer

Dec 2019 – Dec 2020

- Client Solutions:** Delivered scalable full-stack solutions for a diverse portfolio of clients across the education, cryptocurrency, and IoT sectors.
- IoT Integration:** Architected and built "Regreen," an IoT dashboard for real-time device management leveraging React, Tailwind CSS, Node.js, WebSockets, and Azure IoT Hub.

## TECHNICAL SKILLS

- **Languages:** TypeScript, JavaScript (ES6+), Python, PHP
- **Frontend:** React, Next.js, Electron, Redux, Zustand, Tailwind CSS, shadcn/ui, Ant Design, HTML5, CSS3/SCSS
- **Backend:** Node.js, RESTful APIs, PostgreSQL, MySQL, MongoDB, JWT, OAuth 2.0 (FusionAuth), Supabase, Drizzle ORM
- **DevOps & Cloud:** AWS (EC2, S3, Lambda, SES, Cognito, CloudFront), Azure, Docker, CI/CD (GitHub Actions), NGINX
- **Tools & Methodologies:** Solution Architecture, Microservices, Multi-Tenancy (RLS), System Design, i18n / Localization, Git, Jira, Agile, Figma, Vitest, Playwright, Jest
- **AI Augmented Development:** Claude, Codex, GitHub Copilot; proficient in spec-driven development and AI-enhanced workflows to optimize sprint velocity.

## NOTABLE PROJECTS

### Lecture Video Management System

- Led architecture revamp into microservices (Node.js, PostgreSQL, Docker), added adaptive streaming with NGINX VOD.
- Redesigned the entire frontend using React, Tailwind CSS, and Shadcn UI, implementing a mobile-first, accessible design system that reduced user navigation friction.
- Integrated FusionAuth (OAuth 2.0/OIDC) with JWT-based auth and gateway-enforced Role-Based Access Control (RBAC), supporting role separation.
- **Tech Stack:** *Node.js, React.js, TypeScript, PostgreSQL, NGINX VOD, Docker, Zustand, FFmpeg*

### Monastery Operations Platform - Multi-Tenant Operations SaaS

- Built a multi-tenant SaaS unifying branch operations, finance, alms scheduling, and donor pledges across **5+ institutions managing 1,000+ devotees**.
- Implemented strict Row-Level Security (RLS), role-based institution assignments, and Sinhala/English localization on Next.js + Supabase with Drizzle ORM; added a QR-based visitor guide and automated SMS reminders.
- **Tech Stack:** *Next.js, Supabase, Drizzle ORM, TypeScript, shadcn/ui, next-intl*

### Tickle – Cleaning Service SaaS Platform

- Engineered frontend + backend features, improving cross-platform stability and usability in pilot deployments.
- Established a robust testing strategy by implementing unit tests with Vitest and comprehensive E2E testing suites with Playwright, ensuring higher reliability for critical user flows.
- **Tech Stack:** *React.js, Node.js, MongoDB, AWS (S3, EC2, CloudFront), Tailwind CSS, Jira*

### Biometric Community Finance Platform - Community Finance MVP

- Shipped a production MVP for community finance groups: members, loans, payments, and biometric verification.
- Built a custom C# fingerprint bridge (encrypted templates, **1:N matching**) with an Electron scanning station.
- Next.js dashboard on **Supabase Realtime** supporting **300+ members and 100+ active loans** at **\$0 hosting**.
- **Tech stack:** *TypeScript, Next.js, Electron, Supabase, shadcn/ui, C#*

## EDUCATION

### B.Sc. (Hons) Computer Science & Software Engineering (First Class)

*University of Bedfordshire UK (via Sri Lanka Institute of Information Technology - SLIIT) | 2019 – 2022*

## ACHIEVEMENTS & AWARDS

- **Gold Award (Education Category)** – NBQSA 2022 (Eduscope Unified Media Station)
- **Overall Silver Award** – NBQSA 2022 (Eduscope Unified Media Station)
- **Gold Award** – ICSDB 2022 (Eduscope Unified Media Station)