

Suman Ezhumalai

Full Stack Developer

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PROFESSIONAL OVERVIEW

Computer Science graduate with hands-on experience developing backend applications using Java and Spring Boot through academic and personal projects. Skilled in REST APIs, relational databases, and containerized deployments using Docker. Interested in backend engineering, microservices, and web application development.

SKILLS

Java, Spring Boot, Spring Data JPA, Spring Security, REST APIs, JDBC, Mockito, JUnit, JWT-based Authentication, SQL, Object-Oriented Programming (OOP), Multithreading, Streams API, JavaScript, Node.js, React, HTML, CSS, C#, ASP.NET Core, Entity Framework Core, Docker, Git, Nginx, Linux, Maven, Postman, Swagger, PostgreSQL

PROJECTS

QMail – Quantum-Secure Post-Quantum Email Platform

- Developed a secure email platform using Java Spring Boot and Next.js with REST APIs for authentication, mailbox management, and email CRUD operations.
- Integrated a Rust-based Ring-LWE microservice for post-quantum encryption, decryption, and key generation achieving 128-bit quantum security.
- Designed a three-layer security architecture: Ring-LWE public-key encryption, identity-based access control, and AES-256-GCM encryption for private key protection.
- Containerized services using Docker and implemented real-time cross-device sync using InstantDB.

RideSphere – Car Rental Management System

- Built a full-stack car rental platform with Admin, Agent, and Customer roles using ASP.NET Core REST APIs.
- Implemented JWT-based stateless authentication and role-based authorization for secure multi-role access control.
- Integrated PostgreSQL via Entity Framework Core for persistent relational data management.
- Developed a responsive UI using React and Bootstrap for booking, vehicle, and user workflows.

Tranqwell – Productive Activity Management

- Built a full-stack productivity app featuring task boards, Pomodoro tracking, and ambient audio environments using Next.js and React.
- Engineered a fast, lightweight relational data store using SQLite to persist structured user logs and to-do lists.
- Developed a dynamic, clean user interface with low-latency client-side state synchronization to handle audio streaming and countdown intervals smoothly.

Voyager - Self-Hosted VPS with DevOps pipeline

- Built and secured a Linux VPS using UFW, SSH hardening, Fail2ban, and Tailscale for network security and private access.
- Deployed containerized services with Docker, Docker Compose, and Nginx, implementing reverse proxying and automated HTTPS using Let's Encrypt.
- Configured service routing and load balancing for multiple applications through a centralized Nginx reverse proxy.

EDUCATION

Bachelor of Technology | Sri Manakula Vinayagar Engineering College | Pondicherry University
Higher Secondary Education | Amalorpavam Higher Secondary School, Puducherry

Graduated: 2026
Graduated: 2022

WORK EXPERIENCE

IT SUPPORT INTERN | Integra Software Services Pvt. Ltd.

JAN 2025

- Provided networking support, performed system troubleshooting, and developed automation solutions to resolve infrastructure issues.
- Contributed to web development activities within agile, collaborative engineering environments.
- Gained hands-on exposure to structured enterprise workflows and corporate technical support processes.

CERTIFICATION

Programming in Java – NPTEL | Object-Oriented Programming, Multithreading, Exception Handling, Data Structures
Public Speaking – NPTEL | Professional Communication, Presentation Delivery, and Group Dynamics
Responsive Web Design – freeCodeCamp | HTML5, CSS3, Flexbox, Grid, and Semantic UI Development
Air Wing 'A' Certificate – NCC | Leadership, Teamwork, and Crisis Management

ACHIEVEMENTS

Publications & Academic Honors

- Authored and published a research paper titled "*Quantum-Secure Communication Using Number Theoretic Transform (NTT) Accelerated Ring Learning With Errors (Ring-LWE)*" in the **International Journal of Creative Research Thoughts (IJCRT)**.
- Graduated with Distinction, achieving a 9.15 CGPA.
- Secured above 85% in both Higher Secondary Certificate (HSC) and Secondary School Leaving Certificate (SSLC) examinations.