Pragalathan M

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PROFILE SUMMARY

Java and Spring Boot Developer with 2+ years of experience in backend development. Worked on fleet management systems and IoMT-based medical device integration. Skilled in building microservices and REST APIs. Experienced with cloud-native development using AWS and Agile methodologies. Strong database knowledge with PostgreSQL and DynamoDB. Known for writing clean, scalable, and maintainable code, and a fast learner.

EDUCATION

Mass College of Arts and Science, Kumbakonam

Bachelor of Computer Applications(BCA) June 2018 - Apr 2021

Annai College of Arts and Science, Kumbakonam

Master of Computer Applications(MCA) June 2021 - Apr 2023

WORK EXPERIENCE

Datayaan Solutions Pvt Ltd

Intern Feb 2023 - Jun 2023

REST API Development

Tech Stack: Spring Boot, REST APIs, PostgreSQL, Spring Security, JUnit, Mockito

- Designed and developed scalable RESTful APIs using Spring Boot, leveraging Spring Data JPA and Spring Security for modular and maintainable backend architecture.
- Utilized PostgreSQL for database schema design, query optimization, and efficient data handling in high-traffic environments.
- Implemented role-based authentication and authorization with Spring Security to ensure robust and secure access control.
- Developed and integrated backend modules for banking and bus reservation systems, demonstrating strong API design and backend development expertise.
- Authored comprehensive unit and integration tests using JUnit and Mockito, ensuring high code reliability and coverage.

Datayaan Solutions Pvt Ltd

Software Engineer July 2023 - Present

- Designed, developed, and maintained fleet management and IoMT applications using Java, Spring Boot, Quarkus, and Spring Cloud, enhancing system efficiency and reliability.
- Built secure and scalable REST APIs with Spring Security, JWT, and role-based access control (RBAC) to safeguard sensitive data and ensure compliance with industry standards.
- Managed cloud infrastructure and device data integration leveraging AWS services (S3, EC2, ECR, DynamoDB) and PostgreSQL to provide high availability, scalability, and robust data backup solutions.
  Integrated and supported IoMT (Internet of Medical Things) applications for real-time medical device communication, enabling accurate and secure patient data processing.
- Collaborated with cross-functional teams (mobile, QA, product) in Agile sprints to deliver high-quality features, streamline development workflows, and reduce issue resolution time by 40%.
  Ensured 99.9% system uptime and high performance through implementation of automated monitoring, alerting, and performance optimization strategies.

PROJECTS

Yaantrac – Fleet Management Application July 2023 - Present

Tech Stack: Spring Boot, REST APIs, AWS (S3, EC2, ECR, DynamoDB), PostgreSQL, Spring Security

- Developed robust and scalable backend systems using Spring Boot, ensuring high performance, reliability, and maintainability.
- Designed and implemented RESTful APIs to enable seamless and efficient communication between frontend and backend services.
- Integrated AWS services such as S3 and DynamoDB, along with relational databases (AWS TimestreamDB, PostgreSQL), to achieve secure, efficient, and scalable data management.
  Implemented advanced fleet management features including real-time vehicle tracking, route optimization, driver assignment, and reporting, enhancing operational visibility and performance.
- Built and maintained microservices for geofence management, route optimization, and trip tracking, ensuring accurate and reliable location-based operations.
- Developed real-time APIs for trip creation, updates, and monitoring, improving operational efficiency and data consistency.
- Implemented geofence monitoring and real-time alerts for vehicle events such as loading, movement, and stops to ensure safety, compliance, and timely response.

IOMT Medical Application

Oct 2023 - Present

Project: Medyaan – IoMT Device Integration for Medyaan Web Application

Tech Stack: Quarkus, Wireshark, AWS Lambda, API Gateway, WebSocket, DynamoDB, Timestream DB, BLE, TCP/IP, AES Encryption, JWT

Developed Internet of Medical Things (IoMT) applications utilizing Bluetooth Low Energy (BLE) for real-time collection and transmission of patient health data.

- Integrated patient monitoring devices from brands such as Contec and RMS, enabling instant access to accurate and reliable health information.
- Established and managed seamless communication between mobile applications and BLE-enabled medical devices for continuous monitoring and data exchange.
- Implemented real-time data transfer using TCP and WebSocket protocols, ensuring low-latency and consistent connectivity.
- Leveraged AWS services including Lambda, API Gateway, and WebSockets to efficiently display BLE device data within cloud-connected applications.
- Hands-on experience with Android BluetoothGatt APIs for scanning, pairing, and managing read/write operations between mobile apps and BLE devices.

Developed high-performance, cloud-native applications using Quarkus, emphasizing reactive, lightweight, and scalable microservices architecture.

Contec CMS9000, Maestros vital track and RMS Phoebus P515 Patient Monitor Integration (TCP/IP)

- Developed a high-performance TCP server using Netty within the Quarkus framework to enable real-time medical data integration.
- Reverse-engineered proprietary data packets using Wireshark and created custom binary parsers to extract vital signs (ECG, SpO_2, NIBP, Temperature), converting them into HL7-compliant formats for interoperability.

Implemented live data streaming through AWS WebSocket (API Gateway, Lambda) and stored vitals in Amazon Timestream for historical analysis, visualization, and dashboard generation.

- Built secure APIs to enable remote blood pressure triggering, enhancing remote patient monitoring and telehealth capabilities.

HMS7500 Android Tablet Integration with BLE Diagnostic Devices

- Reverse-engineered BLE communication protocols for multiple diagnostic devices, including Spirometer, PH01, and Urine Analyzer.
- Developed secure, GATT-compliant BLE handlers with AES encryption, ensuring reliable and encrypted data exchange.
- Implemented real-time BLE data streaming to mobile and web platforms using cloud-native technologies and WebSocket integration for seamless connectivity.
- Enabled backend-driven BLE control to automate bedside diagnostics and enhance clinical workflow efficiency.

SKILLS

- Languages: Java
- Frameworks: Spring Boot, Quarkus
- Architecture: Microservices, REST APIs
- Developer Tools: Docker, LocalStack
- Cloud Platforms: AWS (EC2, Lambda, S3, SNS, API Gateway, IAM), CloudWatch, RDS
- Databases: PostgreSQL, DynamoDB, Timestream
- Communication Tools: TCP/IP
- Healthcare Integration: Bluetooth Low Energy (BLE), Remote Patient Monitor, HL7