

Ajay Sengar

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EDUCATION

University of Maryland, College Park

Master of Engineering in Software Engineering

College Park, MD

August 2023 – May 2025

Amity University

Bachelor of Technology in Computer Science and Engineering

India

August 2016 – May 2020

EXPERIENCE

Software Engineer

University of Maryland

September 2024 – May 2025

College Park, MD

- Developed and deployed an LSTM deep learning model on **Amazon SageMaker** to predict irrigation amounts, achieving **95%** accuracy and exposed its functionality using a web application.
- Engineered a serverless data pipeline using **AWS Lambda** to aggregate weather API and IoT sensor data hourly, increasing data collection reliability by **90%** over the previous cron job-based approach.
- Automated **Twilio-based SMS/email** alerts, reducing water stress events by **30%** through proactive notifications.

Software Engineer Intern

LGS Tech

May 2024 – August 2024

Baltimore, MD

- Led development of an intelligent service order processing system using **Java Spring Boot**, achieving a **40%** reduction in processing time by leveraging virtual threads to handle over **1,000** concurrent claims.
- Enhanced service order analysis, by integrating **Claude 3 API** with a custom **LangChain** pipeline that automatically extracts, classifies, and validates service request data, reducing manual review time by **65%**.
- Developed annotation-based smart caching using **Spring AOP** and **Redis**, optimizing system performance and cutting service order verification latency from **140 ms** to **40 ms** during peak load.
- Strengthened application security by implementing **Role-Based Access Control (RBAC)**, **OAuth 2.0**, and **OpenID Connect (OIDC)** for robust authentication and authorization.

Software Engineer

A.P. Moller - Maersk

October 2020 – July 2023

New Delhi, India

- Architected cloud-native microservices on **AWS** with **Spring Boot** and **JPA** for a shipment processing system, integrating multiple logistics systems, achieving **35%** lower latency, and supporting **50K** daily shipments.
- Configured additional **Kafka** topics and partitions in the preexisting **AWS MSK** cluster, enabling scalable processing of **500K** daily shipment events and improving real-time tracking across microservices.
- Developed a performance dashboard using the **ELK** Stack to monitor API endpoint traffic for up to **500** endpoints, which helped in generating alerts and detecting issues, reducing incident detection time by 40%.
- Conducted comprehensive testing of Java Spring Boot applications using **JUnit** and **Mockito**, reducing post-release defects by **30%** through rigorous test case design and execution.
- Reduced UI build time from **45** seconds to under **1** second by utilizing a lazy loading pattern and selectively fetching JSON data from a Java Spring Boot microservice based on screen size and user scroll for the shipment logs page.

PROJECTS

ZoomGpt | *Prisma, OpenAI, NextJS, Express, React, Node*

<https://github.com/ajay47k/ZoomGpt.git>

- Engineered a secure video conferencing platform with real-time chat, screen sharing, and an intuitive ReactJS UI, enhanced with LLM-powered modules for meeting summarization and querying of recorded sessions.

TECHNICAL SKILLS

Languages: Java, Python, SQL, NoSQL, JavaScript, TypeScript, HTML/CSS, XML

Technologies: Spring Boot, Spring MVC, Spring Security, React, Angular, NodeJS, OpenAI, Kafka, RabbitMQ, JWT, PyTorch, Keras, TensorFlow, MCP Server, RESTAPI, GraphQL, WebSocket, gRPC, RAG, LLM

DB Technologies: Hibernate, Spring Data JPA, JDBC, PostgreSQL, Redis, Elasticsearch, MongoDB, Cassandra

AWS Skills: EC2, ECS, EKS, S3, Lambda, RDS, DynamoDB, CloudWatch, Elastic Load Balancing, Terraform

Dev Tools: Git, Docker, GitLab, GCP, Azure, Kubernetes, Maven, Gradle, Jenkins, GitHub Copilot, Cursor

Testing & QA: JUnit, Mockito, TestNG, Postman, TDD(Test Driven Development)

Skills: Object oriented programming, Microservices, Fullstack, CI/CD, JIRA, Agile Methodologies, Infrastructure as Code