Manishkumar Alagumalai

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EDUCATION

Indiana University — Bloomington, IN
Masters of Science in Intelligent Systems Engineering — *Aug. 2023 – May 2025*

Course Work | *Applied Machine Learning, Software Engineering, Deep Learning Systems, Graph Analytics, Visual Analytics*

WORK EXPERIENCE

Senior Software Engineer — Jan 2021 – May 2023
Presidio Inc — *Chennai, IN*
- Developed two web chat applications using **React and Node.js** and leveraging AWS serverless architecture with services such as **Lambda, S3, CloudFront, CloudWatch, Chime, and SNS**.
- Designed personalized responses with IBM Watson and Rasa, improving user experience and increasing accurate product suggestions by **70%**.
- Achieved **90%** test coverage across all applications, maintained industry code and security standards, and ensured documentation for functionalities to earn **application bronze level certification.**
- Architected a drag-and-drop application using **React Flow** that allows designers to create complex conversation workflows and seamlessly export files compatible with IBM Watson and Rasa for efficient integration.
- **Training**: Mentored and onboarded a team of 20 interns.

Software Engineer — Nov. 2019 – Jan 2021
Presidio Inc — *Chennai, IN*
- Built a full-stack certification dashboard for **200** agencies using **Angular, Node.js, and IBM DB2** and implemented a CI/CD pipeline with Jenkins and Docker as part of a 4-developer team, showcasing strong teamwork skills.
- Led the migration of an application from Angular 1 to Angular 10, resulting in an **85%** increase in performance.
- Constructed REST APIs capable of processing 5M records to produce data points for **chart.js** visualizations delivering processing time under **400ms**.
- **Training**: Mentored and facilitated the onboarding of a team of 10 interns, providing guidance and supporting professional development.

Software Engineering intern — Dec 2018 – Apr 2019
Coda Global — *Chennai, IN*
- Constructed a full-stack internal application using **Java, Angular, and Spring Boot** that enabled employees to set and track long-term and short-term goals, resulting in a **95%** increase in productivity.
- Designed wireframes using **Adobe XD and Angular** for admin page functionalities, streamlining the approval and declination process for employee certification details.
- Created unit test cases for both back-end and front-end features and functionalities using **Jasmine and Junit** which helped achieve an overall coverage of **98%**.

ACADEMIC PROJECTS

BMS | *React, Python, Fast API, MySQL* — Nov 2023 – Dec 2023
- Innovated a web application for booking movie tickets, enabling users to reserve seats at 4+ theatres across Bloomington.
- Led sprint planning and retrospectives using **JIRA**, and ensured comprehensive documentation for functionalities and spikes in **Confluence** promoting good software development habits and reducing project milestones by **3 weeks**.
- Coded APIs to integrate the Stipe payment gateway for payments and SendGrid for seamless email delivery.

Smart Jira/Outlook Assistant | *Angular, Python, AWS (Lambda, CDK, Chime, SageMaker)* — May 2022 – May 2022
- Created APIs to read ML responses with Lambda and SageMaker for text sentence categorization.
- Built APIs to translate audio transcripts and store files in an S3 bucket ensuring immediate retrieval of data by reducing the read time by **1 - 2 seconds**.
- Leveraged classification output scores to generate JIRA ticket comments and create Outlook calendar events.

TECHNICAL SKILLS

Programming Languages: Java, Javascript, TypeScript, Python, C, C++, HTML, CSS
Frontend Frameworks: React JS, Angular JS, Next JS, Vue JS
Backend Frameworks: Node JS, Express JS, Fast API, Flask, Spring Boot, AWS Serverless, AWS CDK, IBM Watson, Rasa
Build Tools: Git, Docker, AWS CI/CD(Code Build, Code Deploy, Code Pipeline)
Databases: MySQL, IBM DB2, MongoDB, AWS DynamoDB
AWS Services: EC2, Lambda, VPC, Route 53, S3, ECS, EKS, API Gateway, Cloud Formation, Cloud Watch
Machine Learning: Pytorch, Tensorflow, Keras, Pandas, Sklearn

CERTIFICATION

AWS Certified Solutions Architect – Associate