

Manishkumar Alagumalai

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EDUCATION

Indiana University Bloomington, Indiana

May 2025

Master of Science in Intelligent Systems Engineering

GPA: 3.88/4

Relevant Coursework: Software Engineering, Visual Analytics, Computer Engineering, Applied ML, Full-Stack Development

WORK EXPERIENCE

Presidio

May 2019 – May 2023

Senior Software Engineer

India

AVA - Autodesk's Virtual Assistant | *React, .Net, Node.js, Spring Boot, AWS, IBM Watson*

- Orchestrated a virtual assistant chatbot using IBM Watson NLP to dynamically guide users through custom conversation flows, enhancing user engagement and enabling AVA to handle over **35,000 customer queries per month** for Autodesk.
- Implemented a web application utilizing **React Flow**, incorporating over **8 drag-and-drop UI components** to facilitate custom **virtual assistant conversation flow paths**
- Achieved **Bronze standard certification** for the application by adhering to proper **software development standards**, reducing vulnerabilities, and ensuring over **86% overall test coverage**

SBSD - Small Business and Subscriber Diversity | *Angular, Node.js, Spring Boot, IBM DB2, AWS*

- Managed **2 key applications**: one enabling small business owners to register with the Virginia state government, and another dashboard used by government officials to track and monitor business registrations
- Executed a **time-sensitive migration of the Angular 1 application** to a modern framework, collaborating with a team of **5** and following prescribed **migration standards**
- Ensured **60% execution time reduction** in generating reports by optimizing SQL Queries, responsible for generating daily and monthly statistical reports of **1M records**

TRON - TRansformative Orchestration of Network | *React, Fast API, Airflow DAG, Docker*

- Developed a web-based solution to **automate access provisioning tasks** for onboarding new project resources at Disney, streamlining network permission workflows and reducing internal **manual effort by 80%**
- Created over **10 REST APIs** responsible for generating various **Airflow Pipelines**, ensuring proper task execution, which led to a **45% reduction in network errors** and improved response times by **200 milliseconds**

PROJECTS

BMS | *Next.js, Python, Fast API, MySQL*

- Managed **8 successful sprints** with **30 user stories** to ensure delivery of critical features and reduce bug tickets in every sprint **following agile methodology**
- Built more than **5 critical features** like Secure Login, Email services, Chat support, and Stripe payment gateway backed up by proper unit test cases to ensure **error reduction by 40%**

Smart Jira/Outlook Assistant(Hackathon) | *Angular, Python, Chime, SageMaker*

- Engineered a voice-to-action assistant that processed **1M+ sentences/day** using **AWS Lambda and SageMaker**, automating core project management workflows like calendar scheduling and Jira ticket creation, significantly reducing manual workload
- Designed **7 AWS Lambda Functions and API Gateway Endpoints** to handle audio transcript processing and file storage in S3, with proper access control for secure and efficient data retrieval

IAB Taxonomy Ad Classification Platform | *Python, AWS EC2/S3, Flask, Next.js, LLM*

- Developed a web interface to visualize analytics of scraping pipelines, including daily and monthly stats across **240+ ad-related websites**
- Deployed a BERT-based ad classification model on **AWS EC2 with S3-backed storage**, exposing an endpoint to classify ad content into **top 5 IAB Tier 1 labels**

SKILLS

Programming Languages: Java, JavaScript, TypeScript, Python, C#, C++, HTML/CSS

Frameworks & Libraries: React.js, Angular, Next.js, Node.js, Express.js, FastAPI, Flask, Spring Boot, AWS Serverless, AWS CDK, IBM Watson, Rasa, Redux

Testing Frameworks: Jest, Jasmine

Tools: Git, Figma, Docker, Jenkins, Nginx, Apache Tomcat, Power BI

Databases: MySQL, PostgreSQL, MongoDB, IBM DB2, AWS DynamoDB

Query Tools: SQL, NoSQL, GraphQL

Cloud Platforms: AWS

AI/ML Frameworks: TensorFlow, Keras