Achal Mukkapati

732-325-4900 • achalmukkapati@gmail.com • achal-mukkapati • Achal2 • </> Portfolio

Education

Northeastern University **Boston, Massachusetts**
Master of Science in Artificial Intelligence, Concentration in Machine Learning 05/2027

Rutgers University **New Brunswick, New Jersey**
Bachelor of Science in Computer Science and Business Analytics & Information Technology (BAIT) 05/2025

Technical Skills

Languages/Frameworks: Python, Java, SQL, Bash, Korn, HTML/CSS, C, JavaScript, Flask, Spring Boot, R

Libraries: Matplotlib, PyTorch, NumPy, TensorFlow, Pandas, Scikit-learn, Terraform, AWS CDK

Technologies/Tools: MERN Stack, Git, Docker, Kubernetes, Jupyter Notebook, Linux/Unix, Amazon Bedrock

Coursework/Certifications: AWS Certified Cloud Practitioner, Data Structures, Database Design, Algorithms, Artificial Intelligence/Machine Learning, Computer Architecture , Data Science, Software, Agile Methodology

Experience

People Tech Group **Redmond, Washington**
Software Engineering Intern 06/2024 – 08/2024

- Automated **Infrastructure as Code** (IaC) pipelines to convert architecture diagrams into **CloudFormation** stacks
- Invoked **Amazon Bedrock** agents to analyze architecture diagrams from **S3 buckets** and generate configuration prompts, using **Lambda functions** to process input and produce tailored IaC
- Delivered **SDLC** improvements through GitHub-based IaC collaboration, streamlining peer reviews, automating testing with **CodePipeline**, cutting provisioning time by 75% and accelerating **CI/CD** deployment cycles

KBC Bank NY **New York, New York**
Information Technology Intern 05/2023 – 08/2023

- Tested and tuned **SQL** queries for report generation and built scripts to email Oracle alert log errors, monitor space usage, and track backup status using **Cron scheduling**, improving database infrastructure efficiency
- Designed **Bash** and **Korn** automation to eliminate repetitive tasks, saving 2.5 hours daily and minimizing human error across infrastructure monitoring, database maintenance, and system health checks in a production environment
- Shadowed the senior architect, gaining insights into best practices for big data processing with scripting and **AWS**

Projects

AI-Driven Insurance Underwriting Automation - Amazon Bedrock, S3, Lambda, Step Functions

- Formulated an **AI workflow** using **Amazon Bedrock** to extract structured driver data from **S3**-stored license images and assess eligibility by mapping details to underwriting rules and automating risk classification
- Reduced underwriting bias by 20% through responsible AI validation using **AWS Lambda** to retrieve underwriting info and DMV records in parallel, streamlining the decision-making process.
- Leveraged **AWS Step Functions** to automate workflow, including image encoding, and insurance recommendations

Metadata Filtering for Doctor-Patient Access Control - Python, Amazon Bedrock, DynamoDB, Lambda

- Devised **Role-Based Access Control** (RBAC) within Knowledge Bases for **Amazon Bedrock**, ensuring tailored data privacy and security based on user roles, cutting unauthorized data access incidents by 15%
- Integrated **Amazon DynamoDB** to manage doctor-patient associations, ensuring authorized users could access patient data, implemented validation using **AWS Lambda triggers**, increasing efficiency of control checks by 33%
- Engineered an interactive web interface using **Amazon Q Developer**, integrating an **AI agent** to enable seamless user interaction with the knowledge base and deliver context-aware responses

Travel Organization App – Python, MongoDB, Express.js, React, Node.js (MERN Stack)

- A **full-stack web application** that recommends travel hotspots based on user-provided location and date inputs, delivering personalized suggestions for optimized trip planning
- Developed a robust **Express.js** user portal backed by a **MongoDB** database and **RESTful API endpoints**, enabling real-time tracking, storage, and retrieval of user-selected favorite travel destinations
- Constructed **RESTful API** endpoints to support planning and serve personalized suggestions from user history