Achal Mukkapati

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Education

Rutgers University **New Brunswick, New Jersey**

Bachelor of Science in Computer Science, Bachelor of Science in Business Analytics & Information Technology May 2025

On-Campus Activities: RU Blueprint, Quantitative Finance Club, Undergraduate Student Alliance of CS, Data Science Club

Technical Skills

Languages/Frameworks: Python | Java | Bash | SQL | HTML/CSS | Spring | C | JavaScript | React | Korn | R

Libraries/Technologies: Pandas | NumPy | Git | Kubernetes | Oracle | PyTorch | MERN stack | Bootstrap

Coursework/Certifications: AWS CCP | Data Structures | Algorithms | AI/ML | Computer Architecture | MIS | Database Design | Time Series | Data Science | Software Methodology | Discrete Structures

Experience

People Tech Group Seattle, Washington

Generative AI Intern June 2024 – August 2024

- Automated infrastructure as code (IaC) generation, converting architecture diagrams into AWS CloudFormation templates
- Invoked Amazon Bedrock agents to analyze architecture diagrams uploaded to S3, generating targeted configuration questions for infrastructure setup, used Lambda functions to process the diagrams and queries, which produced IaC based on user input
- Enhanced cross-team collaboration by pushing generated IaC scripts to shared GitHub repositories, automating review and deployment processes with AWS CodeBuild and CodeDeploy, and reducing manual configuration time by 75%

KBC Bank NY New York City, New York

Information Technology Intern May 2023 – August 2023

- Tested and tuned SQL queries for report generation and developed scripts to email Oracle database alert log errors, monitor space usage, and track backup status using cron scheduling, contributing to a more efficient database infrastructure
- Designed and engineered Bash and Korn scripts to automate system processes, reducing manual effort by an average of 2.5 hours, facilitating minimal downtime and optimization, and automating daily tasks to minimize human error
- Shadowed the senior architect, gaining insights into best practices for big data processing with scripting and AWS services

Rutgers Mobile App Development New Brunswick, New Jersey

Android App Development Incubator February 2023 – May 2023

- Enforced Android application in a team of four, to develop production-ready application to assist residents of the Rutgers area to find nearby emergency rooms with shortest wait times and locate nearby pharmacies for specific medical supplies
- Crafted a custom search algorithm to help users find nearby pharmacies with specific medical supplies, using the MVC model to process medical supply stock, store data in a MySQL database, and allow clients to track supplies efficiently

New Beginnings New Brunswick, New Jersey

Web Developer September 2022 – February 2023

- Developed an HTTP server with HTML for user interface, serving confidential user data, accessible through two authentication paths: valid username and password, or through previously established successful connections using cookies
- Expanded current website to contain custom graphics and icons pertaining to the company mission statement, increased website engagement 60% by improving website usability and website performance

Projects

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

- Created a solution using Amazon Bedrock to automate the extraction of driver information from license images uploaded to Amazon S3 and assessed driver eligibility for auto insurance based on underwriting guidelines
- Reduced underwriting bias by 20% through responsible AI-driven validation and enabled parallel processing with AWS Lambda to simultaneously retrieve underwriting information and DMV records, streamlining the decision-making process
- Leveraged AWS Step Functions to automate end-to-end workflow, including image encoding, and insurance recommendations

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

- 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 only authorized users could access patient data, implemented dynamic validation using AWS Lambda triggers, increasing efficiency of access control checks by 33%
- Engineered a web application interface using Streamlit, facilitating seamless interaction between users and the knowledge base

Travel Organization App - MERN Stack

- A full-stack web application which displays the recommended hotspots based on the location and the date given by the user
- Implemented a user portal utilizing Express.js to store users' favorite locations in a MongoDB database
- Constructed RESTful API endpoints for seamless interaction and personalized experiences tailored to each user's preferences