

# ACHAL MUKKAPATI

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## EDUCATION

### Rutgers University

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

New Brunswick, New Jersey

May 2025

## 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

**Relevant Coursework:** Data Structures Algorithms AI/ML Computer Architecture MIS

Database Design Software Methodology Discrete Structures Data Science

## EXPERIENCE

### KBC Bank NY

New York City, New York

*Information Technology Intern*

May 2023 – August 2023

- Tested and tuned SQL queries for reports and developed scripts to email Oracle database alert log errors, space usage, and backup status using cron scheduling
- Designed and engineered Bash and Korn scripts to automate system processes, reducing manual hours used by 25% to facilitate minimal downtime and optimization, while also 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 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
- Created a custom search algorithm to help users find nearby pharmacies with specific medical supplies users need, applied Android Studio using the pre-built main infrastructure sourced from Google, planned via Figma
- Employed MVC model, that processes medical supply stock, stores in MySQL database, and allows clients to track supplies

### Rutgers Blueprint

New Brunswick, New Jersey

*Software Engineering Fellowship*

February 2023 – May 2023

- Chosen to partake in an 8-week fellowship, applying data structures to real-life scenarios, created website for Rutgers students to write reviews for classes and professors, incorporated reviews to inform decisions on classes to attend
- Crafted a web application with 3 students, utilizing JavaScript, Django, Jupyter Notebook and advanced React Hooks

### 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 80% by improving website usability and website performance

## PROJECTS

### 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

### Huffman Coding Algorithm - Java

- Imposed a data compression algorithm, Huffman Coding Algorithm, to decode and code files while being able to achieve computational complexity in  $O(n \log(n))$  runtime with reduced filing size of up to 75% in certain test cases
- Optimized priority queues and search trees used to reduce file size by respectively accounting for character occurrence frequency in the inputted file and ASCII value memory through proper string orientation

### Prerequisite Checker - Java

- Executed a course prerequisite checker for the Rutgers Computer Science department by leveraging Depth-first Search Algorithm to locate all direct and indirect prerequisites of specific courses to map and call functions
- Facilitated navigation of Rutgers courses via application of HashMap and Graph data structures to return results

## OTHER SKILLS AND INTERESTS

**On-Campus Activities:** Quantitative Finance Club, Undergraduate Student Alliance of Computer Scientists, Data Science Club