Ayush Uday Desai

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Education

Northeastern University   January 2023 – December 2024

Master of Science, Computer Science | GPA: 3.83/4.00   Boston, MA

- Relevant Courses: Android Development, Program Design Paradigm, Machine Learning, Data Structure and Algorithms, Foundations of Artificial Intelligence, Database Management.

University of Mumbai   August 2018 – May 2022

Bachelor of Engineering, Information Technology | GPA: 9.10/10.00   Mumbai, India

Experience

Software Development Engineer   January 2022 – December 2022

Papa Dont Preach   Mumbai, India

- Crafted and implemented the backend of inventory management application using **Java** and Jetpack components.
- Leveraged **MVVM** and **Redis caching**, cutting data retrieval time by **35%** and boosting responsiveness.
- Integrated QR scanning with ZXing, enabling seamless garment tracking at **8** checkpoints.
- Connected REST APIs with native Android UI to display real-time data updates, cutting manual errors by **20%**.
- Refined build processes by optimizing Gradle scripts, achieving **18% faster** app deployment cycles.
- Containerized backend with **Docker**, reducing server provisioning time by **30 seconds** and ensuring consistency.

Technologies: Java, Android Studio, Redis caching, Gradle, REST, Firebase, Git, Jira, ZXing, Docker

Software Development Engineer Intern   June 2021 – September 2021

Bharat Diamond Bourse   Mumbai, India

- Refined backend architecture by indexing **MongoDB** queries, reducing API response time by **12 seconds**.
- Developed a regression testing model using **Java** and **Step Functions**, reducing ongoing issues by **90%**.
- Executed integration tests with **AWS ECS** and **Docker**, improving system stability by **30%**.
- Worked in an **Agile Scrum** environment, collaborating with teams to deliver system improvements.

Technologies: AWS, Step Functions, Database, Docker, Java, JUnit

Projects

Candle Stick Chart Pattern Recognition | [GitHub](#) | JavaScript, MERN Stack

- Led the development of a stock analysis tool using **React** and **TypeScript** for visualizing candlestick patterns.
- Architected APIs using GraphQL with **Node.js** and Express, processing **10,000+** stock patterns daily.
- Integrated **OAuth** 2.0 to enable secure third-party API access for real-time stock data in the application.
- Launched the website using **AWS Elastic Beanstalk**, automating scaling and management of the application.

Efficient Search | [GitHub](#) | Python, Asynchronous Programming

- Built a concurrent Trie search using Python's **asyncio**, reducing search time by **35%** under heavy loads.
- Introduced an auto-complete feature leveraging graph algorithm, increasing user experience by **25%**.

Twitter Clone | [GitHub](#) | Node.js, React, Express, MongoDB, Postman

- Developed a full-stack application using **Node.js**, **React**, and **MongoDB** to replicate social media functionalities.
- Constructed and tested **RESTful APIs** with **Express** and **Postman**, minimizing API latency by **30%.**

Image Transformation | [GitHub](#) | Java, MVC, Image Processing

- Engineered a Java-based image processing application using **MVC** architecture, enabling **7** manipulation features.
- Applied Object Oriented Programming principles for a modular, scalable codebase, reducing redundancy by **20%**.

Lightweight Database Engine | [GitHub](#) | C, File I/O, B-Trees, System Programming

- Built a file-based database engine to handle **SQL**-like queries in C, improving structured data retrieval.
- Implemented a scalable **B-Tree indexing** system, accelerating query execution by 4x and reducing disk reads.

Technical Skills

Languages: Python, Java, C
Database: SQL (MySQL, PostgreSQL), NoSQL (MongoDB, DynamoDB, Snowflake)
Frameworks/Tools: Flask, Django, React, Node.JS, Git, JUnit, Docker
Web Development: Php, AngularJS, JavaScript, MERN Stack, AJAX, Bootstrap, jQuery, HTML, CSS
Cloud: AWS (SQS, Step Functions, DynamoDB, S3, CloudFormation, Config, EC2, lambda, Fargate, CloudTrail)