

Tony Mathen

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EDUCATION

Santa Clara University

Santa Clara, CA

Master of Science in Computer Science and Engineering

September 2021 - June 2023

Coursework: Data Structures and Algorithms, Computer Networks, Advanced Operating Systems, Distributed Systems, Object Oriented Design and Analysis, Machine Learning, Web Search and Information Retrieval.

Dr. Babasaheb Ambedkar Marathwada University

Aurangabad, India

Bachelor of Engineering in Computer Science and Engineering

August 2015 - May 2019

Coursework: Database Systems, Compiler Design, Data Mining, and Data Warehousing, Cloud Computing, Web Technologies.

WORK EXPERIENCE

INRIX, Inc

Seattle, WA

Software Engineer Intern - Backend | Java (Dropwizard) · Redis · AWS

June 2022 - September 2022

- Created a full-stack application to visualize the real-time movement of vehicles using geospatial data. This application helps understand traffic flow during peak hours and determine evacuation patterns during disasters.
- Developed the backend application in Java that processes incoming GPS points from a Kafka feed and writes it into a Redis cache. Improved the accuracy by **5%** by implementing different strategies (multi-threading, removing anomalies, etc) to obtain a smoother visual of the vehicle movement on the UI.
- Created a Redis store using **AWS ElastiCache** supporting writes of **1 million+** GPS points every 3 minutes. Implemented data archiving on the incoming feed using **AWS S3** for retrieving past vehicle movement and developed REST API in Dropwizard to visualize this data on the UI.

TATA Consultancy Services Limited

Chennai, India

Software Engineer - Systems | IBM DataStage, ACE, WMQ · ESQL · Control-M

July 2019 - August 2021

- Collaborated with 30+ developers across 4 teams to design, implement and migrate integration flows to **Azure Cloud** using IBM ACE, WMQ, Mule, and DataStage to integrate multiple third-party applications and streamline the flow of data across different business verticals of a UK-based retailer.
- Improved runtime efficiency and reduced operational costs of ETL jobs in IBM DataStage by simplifying and optimizing server and parallel jobs.
- Reduced the deployment time of integration jobs by **40%** by developing custom Ansible modules that optimized the CICD pipeline.
- Spearheaded the development of audit dashboards on the New Relic platform. This dashboard helps developers in monitoring integration flows thus improving overall SLA compliance.

TECHNICAL SKILLS

Programming Languages: Python, Java, JavaScript, HTML/CSS

Databases: MongoDB, MySQL, PostgreSQL, Redis

Frameworks and Platforms: React, Springboot, Maven, JUnit, Kafka, SOAP/REST API, IBM Websphere Message Queue

Cloud & DevOps: Jenkins, Ansible, Git, Shell, Docker, Kubernetes, AWS (EC2, Lambda, ECS, EKS, S3, RDS, DynamoDB)

MAJOR SOFTWARE DEVELOPMENT PROJECTS

Distributed Hashtable using Chord protocol | Java · RMI

- Developed a highly available and scalable distributed key-value store by implementing the Chord protocol.
- Implemented consistent hashing for the distribution of keys and replication of factor 2 to make the system fault-tolerant.

ParkSafe – Web application for finding safe parking spots | Javascript · Python (Flask)

- Analyzed historical crime statistics(time, location, description, etc) for San Francisco and developed a metric (Safety Score) to find the probability of car thefts happening for a parking spot.
- Created a custom API and a web application to rank available parking spots based on car-related crimes.

FundMe - Crowd Funding Application | Java (Springboot) · MongoDB · Angular · Docker · Kubernetes

- Created a web application by implementing the repository pattern to start and support crowdfunding projects. Features include user authentication using Firebase, an admin dashboard to approve projects, and a reward system to disburse funds.