

Tony Mathen

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SKILLS

Programming Languages: Java, Python, JavaScript, TypeScript

Databases: MongoDB, MySQL, PostgreSQL, Redis

Frameworks and Platforms: ReactJS, Next.js, Springboot, Kafka, RESTful API

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

WORK EXPERIENCE

Frugal Innovation Lab, Santa Clara University

Santa Clara, CA

Research Assistant | *Node.js, Typescript, MySQL, Flutter*

Jan 2023 - Present

- Engineered a solution for the GoodBuys project, aimed at enabling consumers to find ethically produced goods, thereby promoting sustainable consumption and production.
- Developed **REST APIs**, **Web scrapers** and mobile application for finding ecolabels for different brands.

INRIX, Inc.

Seattle, WA

Software Engineer Intern - Backend | *Java (Dropwizard), Kafka, AWS*

Jun 2022 - Sept 2022

- Engineered the **first real-time** web application for vehicular traffic visualization using GPS data helping acquire **4** customers. This application identifies back-of-queue traffic incidents, saving monitoring infrastructure for clients.
- Developed REST APIs in **Java** to process GPS points from a Kafka feed and render **1M+** vehicles on a map in real-time.
- Scaled the application with **AWS ElastiCache** and multithreading, enhancing read/write speed and reducing delay by **30.77%**.
- Engineered the 'Playback' feature using **AWS S3** and APIs empowering users to analyze and visualize historical traffic data.
- Created CICD workflow using GitHub Actions, **AWS ECS**, and **EKS** streamlining development and deployment.

TATA Consultancy Services Limited

Chennai, India

Software Engineer - Systems | *Azure Functions, Logic Apps, Service Bus, Python, Java*

Jul 2019 - Aug 2021

- Designed messaging solutions using **Azure Logic Apps and Service Bus** to streamline real-time messaging system for a UK-based retailer. Implemented message transformation and enrichment using **Azure Functions and Java**.
- Developed a new Kafka integration pattern using IBM App Connect Enterprise to streamline 15+ legacy consumer flows, saving **\$65K**.
- Reduced integration job deployment time by **40%** using custom Ansible modules, optimizing the CICD pipeline and saving engineering efforts.
- Implemented a secure file transfer solution with SFTP and **Azure VM** for efficient file transfers, replacing legacy MQFTE solution, saving licensing and support fees.

EDUCATION

MS in Computer Science

Santa Clara University, CA

Sept 2021 - Jun 2023

BE in Computer Science

Dr. Babasaheb Ambedkar Marathwada University, India

Aug 2015 - May 2019

OPEN SOURCE

Linux Foundation, LFX Mentorship | *Hyperledger Fabric, Golang, gRPC*

Jul 2023 - Present

- Integrating **BDLS** consensus protocol with Hyperledger Fabric as part of **LFX Mentorship**.

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.

Bully Algorithm: Leader Election in Distributed Systems | *Java (Socket, Thread), Docker*

- Implemented the Bully algorithm using **socket** programming in Java. Dockerized the distributed nodes and incorporated message passing, leader election, and heartbeat functionalities using the **Thread** library.

Movie Recommendation using Collaborative Filtering | *Python · Numpy · Pandas*

- Implemented KNN method for user-based and item-based collaborative filtering to predict ratings of movies.

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.