# Rayan Crasta - Software Engineer

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## Summary

Dynamic software engineer with a strong background in Python and a focus on system design, software development, and database management. Proven ability to collaborate effectively with cross-functional teams and stakeholders to deliver innovative solutions. Passionate about applying quantitative methods in software engineering to optimize processes, particularly in high-performance applications. Seeking to contribute to a growth-oriented team in the financial services sector, particularly in Fixed Income.

## Work Experience

**Mint People** - Front of House Staff & Kitchen Porter (Part Time)
*May 2024 – Aug 2024, UK*

- Provided exceptional customer service in restaurants and clubs, handling reservations, seating, and resolving inquiries.
- Supported kitchen operations through dishwashing, food preparation, and maintaining cleanliness.

**Hap Solutions** - Festival and Bar Staff (Part Time)
*June 2024 – Aug 2024, UK*

- Delivered excellent customer service at festivals and events, managed bar operations.

**Royal Mail** – Warehouse Operative (Part Time)
*Nov 2023 – Dec 2023, Northampton, UK*

- Loaded/unloaded shipments and sorted items efficiently to optimize workflow.

**Tata Consultancy Services** – Assistant Systems Engineer (Full Time)
*June 2021 – Aug 2023, Mumbai, India*

- Developed bash scripts to automate the hardening process of over 100+ Linux servers for compliance based on CIS benchmarks, saving 900+ hours of manual compliance efforts. Recognized with the "Best Team" award for this initiative.
- Conducted security analysis on Angular and Spring Boot codebases using Checkmarx and Fortify WebInspect, identifying and mitigating critical vulnerabilities.
- Integrated third-party antimalware and data tokenization solutions into existing architectures.
- Conducted manual web application security testing using OWASP ZAP and Burpsuite, identifying and addressing critical vulnerabilities, thus enhancing application security.

**Qustac Technologies Pvt. Ltd** - Android Development Intern (Part Time)
*Mar 2020 – Jan 2021, Mumbai, India*

- Developed an Android application using Android Studio and Java, integrating TensorFlow Lite for real-time classification of explicit and non-explicit images on Android devices.
- Streamlined machine learning model for automatic actions upon detecting explicit content within image files.

## Projects

**TweetOps: Twitter-like Tweet Ingestion and Search Backend** Blog | GitHub

- Developed a Twitter-like backend prototype using Go, FastAPI, Kafka, PostgreSQL, and Elasticsearch.
- Managed a dataset of 500K tweets, categorized by language, and ingested into Elasticsearch via Kafka.
- Utilized Elasticsearch for real-time tweet search and immediate availability of ingested tweets.
- Created user and tweet search functionalities with PostgreSQL and Elasticsearch, including pagination.
- Developed a FastAPI service for flagging profane tweets based on a model, integrated into the ingestion process for safe search.

### MyShowSeat: Booking Service Backend Blog | GitHub

- Developed a booking service backend prototype using Go, Redis, and PostgreSQL.
- Implemented booking logic for seat checks, claiming, payment verification, and finalization, ensuring a seamless user experience during high traffic.
- Utilized Go's concurrency for asynchronous processing, maintaining data integrity with PostgreSQL transactional operations and row-level locking.
- Enhanced performance with Redis caching for seat availability, reducing database calls and improving scalability. Incorporated JWT token-based authentication for secure service access.

### Debate Management System (Dissertation Project)

- Designed a platform for managing structured debates in academic settings, incorporating gamification, quizzes, and real-time feedback.
- Built using React.js for responsive UIs and FastAPI for backend logic, with PostgreSQL for authentication and MongoDB for debate storage.
- Utilized Redis for real-time tracking and WebSockets for live updates during debate sessions.
- Provided detailed post-debate analytics to help educators enhance teaching strategies.

## Education

**University of Leicester**
*MSc Cloud Computing (Sept 2023 - 2024)*

**Mumbai University**
*Bachelor of Engineering, Information Technology (2021)*, 9.42 CGPA

## Skills

- **Languages**: Python, Go, FastAPI, Django, Bash, JavaScript, Java, ReactJS
- **Databases**: PostgreSQL, MongoDB, Redis
- **Infra**: Linux, Docker
- **Tools**: Kafka, Elasticsearch, Prometheus, Grafana
- **Security**: Burpsuite, Checkmarx, WebInspect, OWASP ZAP
- **Soft Skills**: Strong communication, teamwork, problem-solving, adaptability, and analytical thinking

## Additional Information

- Available to work collaboratively with stakeholders, PMs, and researchers to accelerate the research process in quantitative engineering.
- Eager to leverage my Python expertise and software engineering skills to contribute to innovative solutions in the financial services sector, particularly in Fixed Income.