

KARTIK SHRIMALI

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EDUCATIONS

MIT World Peace University (MIT-WPU)

B.E. Computer Science and Engineering

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SEP 2023 - JUN 2027

CGPA : 8.28/10.0

PROJECTS

Crypto Exchange Platform | 🌐 Github

- **Developed** a custom **order-matching engine** from the ground up using price-time priority (FIFO), effectively managing both limit and market orders for a full-stack **crypto exchange**.
- **Designed** a **Redis pipeline** to connect the REST API to the engine via a request/response queue, and linked the engine to the WebSocket server through pub/sub for real-time updates on order book, trades, and balances.
- **Implemented TimescaleDB** continuous aggregates to deliver live candlestick charts across 8 intervals (1m to 1w) without requiring recomputation on each request.
- **Established** engine-state snapshotting every 3 seconds, enabling the matching engine to restore open orders and balances post-restart with zero order loss.
- **Launched** JWT authentication, 3 live markets (BTC/ETH/SOL), and a concurrent market-maker bot that continuously quotes both sides of the order book to maintain liquidity.

Technologies / Tools Used : Next.js, Node.js, Redis, TimescaleDB, WebSockets

Dynamic Price Comparison Platform | 🌐 Github

- Developed a **full-stack price comparison system** for shopkeepers and customers, hosted on **Linux-based AWS infrastructure**.
- Containerized the application using **Docker** and deployed it via **AWS ECS**, leveraging **Terraform** for infrastructure-as-code and **Jenkins** for CI/CD, enhancing the deployment pipeline for reliability and consistency.
- Implemented **JWT-based authentication**, established role-based access control, and automated cron jobs for price tracking with alerts for price drops.

Technologies / Tools Used : React.js, Express.js, MySQL, Docker, AWS

Crop Disease Forecast | 🌐 Github

- Developed a **JavaFX** desktop client and **Spring Boot** backend for a collaborative project that forecasts crop diseases from image input; a teammate trained the **CNN** model.
- Integrated **JDBC**-based persistence and connected the desktop UI to the backend, enabling real-time model predictions with each image upload.

Technologies / Tools Used : JavaFX, Spring Boot, JDBC

SKILLS

Databases :	MySQL, PostgreSQL, MongoDB, TimescaleDB, JDBC, Redis
Frameworks & Libraries :	Node.js, Express.js, Hono, Spring Boot, React.js, Next.js, React, Tailwind CSS, Express
Programming Languages :	C, C++, Java, JavaScript, TypeScript
Tools & Platforms :	Linux, Docker, AWS, Terraform, Jenkins, Cloudflare Workers, Git, GitHub, Kubernetes, Postman, CI/CD

EXTRACURRICULAR

- Participant, HackMIT Ideathon, organized by MIT-WPU.