Tanishka Solanki

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Technical Skills

Languages and Databases: C++, Python, JavaScript, TypeScript, HTML, CSS, MongoDB

Frameworks, Tools & Systems: Node.js, Express.js, React.js, Git, Docker, AWS, Data Structures & Algorithms, REST APIs

Projects

Hyperlocal Inventory Synchronization System
Node.js, Express, MongoDB, Socket.IO, Docker

- Built and deployed a **a real-time inventory synchronization system** to keep stock levels consistent across hyperlocal stores.
- Designed **REST APIs with atomic updates** and live synchronization using Socket.IO to prevent overselling and stock mismatches.
- Containerized services with **Docker** for scalable and portable deployment.
- Aims to solve the problem of **inventory mismatch and delays in local supply chains**, helping small retailers reduce losses and improve product availability for customers.

B+ Tree Implementation
C++

- Implemented a **B+ Tree data structure in C++** supporting efficient insertion, search, and range queries with logarithmic time complexity.
- Designed **node splitting and tree balancing algorithms** to maintain structural integrity and performance.
- Demonstrated real-world applications of B+ Trees in **database indexing and file system organization**.
- Strengthened expertise in **pointers, dynamic memory allocation, and object-oriented programming through hands-on implementation**.

Cleario – *A Netting Engine For Financial Settlement*
MongoDB, Express.js, Node.js, React, REST APIs

- Designed and implemented a **multi-party netting engine** to optimize B2B settlements by reducing thousands of bilateral transactions into minimal transfers.
- Built a **MongoDB + Express** backend with **REST APIs** to manage participants, obligations, and settlement runs.
- Developed a **netting algorithm using balance computation and greedy matching**, reducing transaction volume and liquidity requirements.
- Created **real-time settlement reports** with net positions and proposed transfers for transparent reconciliation.
- Deployed the MVP on **cloud infrastructure with Docker**, enabling scalability and seamless API access.

Certifications & Awards

- **MongoDB Associate Database Administrator** – *MongoDB*
- **Foundations of Cyber Physical System** – *NPTEL*
- **IBM Cyber Security Analyst** – *IBM*
- **The Bits and Bytes of Computer Networking** – *Google*

Education

Vellore Institute of Technology, Bhopal   Oct 2022 – Sep 2026
B.Tech in Computer Science (Cyber Security & Digital Forensics)

Delhi Public School, Satna   Aug 2020 – Jun 2022
Higher Secondary Education