Vansh Jangir

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EDUCATION

IIIT Naya Raipur	Raipur, Chhattisgarh
B.Tech. in Data Science and Artificial Intelligence, CGPA: 8.5	*2022 – 2026*
Dundlod VidyaPeeth	Jhunjhunu, Rajasthan
CBSE 12th - 95.00%	*2015 – 2022*

COURSEWORK

- Operating Systems
- AI and ML
- Data Structures
- DBMS
- Reinforcement Learning
- Deep Learning
- Distributed Systems
- Computer Vision

EXPERIENCE

ContractKen - SDE Intern | *Python, Flask, Redis, React, TypeScript*   August 2024 - November 2024

- Engineered 5+ advanced formatting tools, enhancing user interaction and navigation for legal documents. Increased document review speed 30% across the platform.
- Facilitated the adoption of formatting tools by over 500 users, streamlining the contract drafting process. Reduced manual document corrections by 40% in document corrections.
- Optimized OpenAI API integration, boosting performance by 20% when parsing JSON outputs, improving system efficiency. Cut overall processing time by 15%.

PROJECTS

XDB: An ACID compliant database | github

- Devised an **ACID-compliant** database and storage engine in **Go**, processing over 5000 transactions/second. Integrated concurrency control, ensuring data consistency across multiple transactions.
- Constructed Disk-based **B+tree** for storage, with **Copy-on-Write** mechanism reducing I/O overhead by 30%. Improved disk utilization, allowing more efficient memory management.
- Attained **O(logn)** query time for point lookups, and **O(k*logn)** for range queries. Streamlined indexing structure to support high-performance query execution at scale.

Hardcode: An online platform to solve coding problems | website github

- Architected a platform for practicing problems, submitting solutions, and receiving real-time results.
- Crafted a responsive frontend using **ReactJS**, with **NodeJS** and **Express** for the backend, **MongoDB** database, and **Docker** for containerization and **GCP** for deployment.
- Incorporated **RabbitMQ** as a messaging queue, scaling submissions to 500 per minute on a single judge, independent from the rest of the system.

Load Balancer | github

- Designed a load balancer in **C++** using tcp socket programming, which can handle **50k+** connections per second, with distributed resource allocation across threads, enhancing system responsiveness.
- Leveraged thread library for **multi-threading** and **epoll** for event driven architecture in the system. Multi-threading integration reduced latency by **4x** (no of cores).
- Implemented Epoll (for Linux) and reduced CPU usage by **50%**. Enhanced system stability under high traffic loads, ensuring consistent performance.

ACHIEVEMENTS

Hackathons: Hack-O-Harbour - AIML track winner (4th overall) among 40+ teams, held at IIIT Naya Raipur.

TECHNICAL SKILLS

Languages: C, C++, TypeScript, Python, Go, SQL.
Frameworks: ReactJS, ExpressJS, NextJS, Gin, Go-chi, Flask, HTML, CSS
Tools: GNU/Linux, Git, Docker, AWS, MongoDB, Make, CMake, Vim/Neovim, POSIX threads, Socket Programming.