PAYAS VAISHNAV

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Education

Pandit Deendayal Energy University **July 2023 – May 2027**
*Bachelor of Technology in Computer Engineering (**9.24**/10 CGPA)* *Gandhinagar, Gujarat*

Work Experience

Jio Platforms Ltd. **May 2025 – July 2025**
SDE Intern *Mumbai, Maharashtra*

- Worked on Jio's **Network Instrumentation Platform**, a **large-scale distributed system** for **real-time and historical network traffic analysis**.
- Developed a **high-performance** C++ **microservice** using **simdjson** and **librdkafka** for efficient ingestion and **parsing** of **high-volume packet capture (pcap) data**, achieving ≈ 4.5× JSON parsing over traditional libraries.
- Designed and deployed **containerized data pipelines** with **Kafka + Docker**, ensuring **99.9% uptime** and enabling modular, fault-tolerant telemetry flow.
- Optimized packet flow handling for both **core and IoT networks**, improving throughput by **30%** through identifier-based optimizations.
- Explored **HDFS** for distributed storage and **Boost C++** libraries to enhance performance, reliability, and code maintainability.

Projects

Network Packet Processing Suite | *C++, Kafka, librdkafka, simdjson*, HTML/CSS ***Hosted Link***

- Built a suite of **C++ microservices** for **converting, parsing, and streaming high-volume network packet data**, sustaining **>100k packets/sec throughput**.
- Emphasized **loose coupling** and **observability**, allowing independent **deployment** and **efficient service** orchestration.

Grievance Registration System | *MongoDB, Express.js, React.js, Node.js, HTML/CSS* ***GitHub Link***

- Engineered a **full-stack complaint resolution platform (MERN)** with **real-time issue tracking** and a **role-based admin dashboard**, supporting **100+ concurrent users**.
- Developed secure **JWT-based auth** and **modular RESTful APIs** to streamline the **end-to-end** complaint lifecycle from user registration to resolution.
- **Collaborated** with a cross-functional team to deliver a **fully functional MVP** in under 12 hours during a hackathon, tailored for deployment by a local municipal authority.

PairWise (Experimental Research Project) | *C++, Python*

- Developing a **C++ backtesting engine** to validate a **statistical arbitrage (Pairs Trading)** strategy on historical market data.
- Performing rigorous **in-sample** and **out-of-sample analysis** in Python, using cointegration tests and hedge ratios to establish a statistical edge.

Technical Skills

Languages: C, C++, Java, JavaScript, SQL, Python
Systems/Infrastructure: Linux, Kafka, librdkafka, simdjson, Docker, Wireshark, Microservices, HDFS (Basic Familiarity), Git, GitHub, Postman, Burpsuite, Visual Studio Code, Sublime Text
Technologies/Frameworks: MongoDB, Express.js, React.js (Basic Familiarity), Node.js, MySQL, REST APIs, Boost C++ (Basic Familiarity)
Computer Fundamentals: Data Structures and Algorithms, DBMS, OOP, Operating System, Computer Networks

Competitive Programming, Leadership & Achievements

- **Codeforces:** Peak Rating of **1434 (Specialist)** (Profile)
  - Ranked **974th** out of **32,000+** participants in **Codeforces Round 1054 (Div. 3)**.
- **CodeChef:** Highest Rating of **1617 (3-Star)** (Profile)
- Solved **300+ problems** on LeetCode and actively participate in prestigious competitive programming competitions such as **ICPC**, **IICPC**, **Meta Hacker Cup**, etc.
- Delivered a **lecture on Number Theory** at a Competitive Programming Bootcamp, attended by **100+ students**, receiving highly positive feedback.
- Assumed Leadership roles in the **Association for Computing Machinery** Student Chapter and the **Google Developer Groups**; organized coding and technical events, fostering campus programming engagement.
- Led a team that qualified from 150+ teams in the internal round of Smart India Hackathon (SIH).