KIRTAN PATEL

kirtannpatel2003@gmail.com   +1 630-720-2202   Linkedin   Github

Software Engineer with strong systems and backend focus, experienced in distributed systems, concurrency, and low-latency service design.

Languages: C, C++, Python, Java, JavaScript/TypeScript.
Familiar: SQL,Go, Swift, MATLAB, R, F#.
Frameworks: React, React Native, Node.js, FastAPI.
Systems/Backend: Multithreading, Concurrency, Sockets, REST APIs, Memory Management.
Tools: AWS, Docker, Git, GDB, Linux/WSL, Jira, VS Code.

EXPERIENCE

React Native Software Developer Intern — Resilience Inc
November 2025 - Present

- Reworked **backend API request flows**, cutting **peak-traffic latency by 30%** at production scale
- Improved UI render performance by **25%** through memoization, render batching, and optimized state management
- Resolved **production memory leaks and async race conditions**, lowering error reports by **40%**
- Containerized backend services using **Docker**, improving deployment consistency

Teaching Assistant - (MATLAB), (C/C++ Programming)-UIC
August 2024 – Present

- Assisted **250+ students** by diagnosing and resolving programming errors during **labs**
- Investigated and fixed 200+ C/C++ programs, addressing **segfaults**, **memory leaks**, and **race conditions**
- Guided students through complex codebases, reinforcing best practices for **memory safety and concurrency**

PROJECTS

Multithreaded Web Server -Systems Programming(C, Concurrency, Thread Pool) - MultiThread Web Server

- Engineered a **multithreaded HTTP/1.1 server in C** using a **thread pool and bounded queue**, achieving **5× throughput** under concurrent load
- Added **rate limiting, routing, and dynamic worker scaling** to maintain stability under heavy traffic

ClusterStore (C++, Python,Sockets) -   ClusterStore

- Implemented a **hash-partitioned distributed key-value store** supporting **concurrent reads and writes** across multiple nodes
- Designed **low-latency TCP messaging**, reducing inter-node overhead by **35%**
- Built a **Python load-testing framework** handling **thousands of requests/sec**, improving throughput by **25%**
- Implemented **timeouts and retries** to maintain consistency during **partial node failures**

Distributed Cache Simulator (Python , Distributed Systems, Caching)   - Cache Simulator

- Created a **distributed in-memory cache simulator** with **sharding and replication** across nodes
- Integrated **LRU/LFU eviction policies** and workload-driven testing to analyze **cache hit rate and throughput**
- Simulated real-world caching behavior using core **distributed systems principles**

BIOTRACK – Full-Stack Conservation Platform (FastAPI, React, PostgreSQL) - BioTrack

- Delivered **20+ REST endpoints**, reducing average response time from **220ms to 130ms (40%)**
- Structured a scalable PostgreSQL schema for **10k+ records**, with indexing improving lookup speed by **45%**
- Applied **caching and pagination**, cutting redundant database queries by **40%**

EDUCATION

University of Illinois at Chicago
Bachelor of Science in Computer Science — Expected May 2026

Relevant Coursework: Operating Systems, Computer Networks, Distributed Systems, Systems Programming, Data Structures, Algorithms

ACHIEVEMENTS AND CERTIFICATIONS

- **JPMorgan Chase** — Software Engineering Virtual Experience: Built **Kafka**-based event **pipeline** using **Spring** Boot and **H2** database.
- **Walmart USA –** Advanced Software Engineering Virtual Experience (Forage)