

MOHAMMAD ARQAM

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PROFESSIONAL SUMMARY

Computer Science student with hands-on experience building low-level networking systems, distributed architectures, and production-style full-stack applications. Strong background in socket programming, concurrency, protocol design, system performance analysis, and user-facing application development. Seeking backend or frontend software engineering internship roles.

TECHNICAL SKILLS

Languages: Java, C, C++, Python, SQL, JavaScript, HTML, R

Systems & Networking: TCP/IP sockets, concurrent servers, thread pools, synchronization primitives, client-server & P2P protocols, gossip dissemination

Web & APIs: RESTful API design, authentication & authorization, HTTP request parsing, React, SPA backends

Databases: PostgreSQL, SQL Server, Neo4j; schema design, indexing, transactions

Data & Analysis: Pandas, NumPy, Matplotlib; exploratory data analysis fundamentals

Tools: Git/GitHub, Linux CLI, Docker, GitHub Actions CI, VS Code, Eclipse, Android Studio

Core CS: Algorithms & Data Structures, Operating Systems, Distributed Systems, Software Engineering principles, SDLC

PROJECTS

TableTrack — Restaurant Reservation & Management Platform

Architected a full-stack, service-oriented platform supporting authentication, role-based access control, restaurant discovery, and real-time reservation availability. Designed REST APIs with Express and relational schemas for users, restaurants, tables, and reservations, enforcing transactional integrity for booking operations. Built responsive React-based UI components for browsing restaurants, viewing availability, and managing bookings with a focus on usability and clean interaction flows. Performed load and concurrency testing to validate correctness and system behavior under simulated multi-user reservation traffic. Containerized backend services with Docker and integrated CI pipelines using GitHub Actions.

TreeDrive — Stateful File Sharing Server

Engineered a custom application-layer protocol over TCP to support authenticated file upload, download, deletion, and metadata queries. Implemented persistent metadata storage and server-side validation, and load-tested the system with concurrent clients to analyze throughput, latency degradation, and failure behavior under stress.

TreeOne — Multi-Threaded HTTP Server & Web Client

Built a multi-threaded HTTP server with request parsing, routing, and concurrency handling. Integrated the server with TreeDrive via sockets to proxy file operations and developed a C-based HTTP screen scraper to automate requests and validate robustness.

TreePeer — Decentralized P2P File Sharing System

Implemented a peer-to-peer architecture using gossip protocols for peer discovery and metadata synchronization. Designed ANNOUNCE, GET_FILE, DELETE, and replication messages to achieve eventual consistency across peers. Performed load testing to observe message propagation behavior

and replication consistency under increasing peer counts, and generated a live HTML dashboard visualizing system state and message statistics.

Demeter's Garden — Restaurant Discovery & Reservation Web App

Designed and implemented a responsive web application focused on usability and accessibility. Built dynamic UI components for browsing restaurants, viewing menus, submitting reviews, and managing reservations using HTML, CSS, and JavaScript, with emphasis on clean layout, user flow, and interaction design.

Garbage Collection Simulator

Implemented a fixed-size heap allocator in C featuring reference counting, compaction, and memory reuse. Developed diagnostic tools to inspect heap state and debug fragmentation and memory leaks.

PROFESSIONAL EXPERIENCE

Vehicle Service Agent – Hertz Car Rental (Aug 2025 – Present)

Operated under strict timelines to inspect, document, and prepare vehicles while coordinating with team members to maintain operational throughput and safety compliance.

Security Guard – Impact Security (2022 – 2024)

Conducted patrols, enforced policies, handled incidents, and produced detailed reports in high-pressure environments.

EDUCATION

University of Manitoba — Bachelor of Science in Computer Science

Minors: Marketing & Statistics

Expected Graduation: January 2027

Relevant Coursework: Data Structures & Algorithms, Operating Systems, Distributed Systems, Databases, Software Engineering, Human-Computer Interaction, Artificial Intelligence, Computer Networks

LANGUAGES

English (Fluent), Arabic (Fluent), Urdu (Fluent)