

# TALHA JABBAR

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## EDUCATION

### Texas Tech University

Master of Science in Computer Software Engineering — GPA: 3.7

Aug 2023 – Expected May 2025

Lubbock, TX

### National University of Computer and Emerging Sciences

Bachelor of Science in Computer Science — GPA: 3.52

Aug 2018 – May 2022

Karachi, Pakistan

## EXPERIENCE

### Texas Tech University System

Application Developer – Graduate Assistant

Dec 2023 – Present

Lubbock, TX

- **Technologies:** C#, .NET, JavaScript, Oracle Database, PL/SQL, LINQ, REST API, GraphQL
- Reduced network overhead by building optimized **GraphQL APIs** for high-traffic resources, replacing inefficient REST endpoints.
- **Migrated legacy applications from Grails and Groovy to .NET 8**, improving performance, maintainability, and user experience.
- Built full-stack features for **40,000+** students by developing RESTful APIs with C#, .NET, and Oracle PL/SQL scripts, and crafting dynamic UIs with React.js and Redux.

### National Energy Research Scientific Computing Center, Lawrence Berkeley Lab

Software Engineer Intern

May 2024 – August 2024

Berkeley, CA

- **Technologies:** Python, FastAPI, Redis, RabbitMQ, MySQL, Docker, REST API
- Benchmarked **Superfacility API** (a RESTful service for automating **HPC workflows**) under fixed, ramp-up, peak, and spike load profiles to identify performance bottlenecks.
- Optimized API performance by refactoring blocking synchronous logic into **asyncio-based non-blocking execution**, increasing concurrency and reducing response times by **over 30%** on high-traffic endpoints.
- Designed a blueprint to integrate **Elasticsearch** with **SLURM** (a job scheduler for HPC systems), streaming real-time job data into indexed search via logging plugins and message queues to overcome SLURM query latency and enable near-instant access to job status and history.

### Logiciel Services

Software Engineer

June 2022 – July 2023

Karachi, Pakistan

- **Technologies:** C#, .NET Core, Redis, RabbitMQ, React.js, Redux, SignalR, Entity Framework Core, LINQ, REST API
- Developed a real-time monitoring system for **FIX (Financial Information eXchange)** protocol-based trading environments, enabling live tracking and diagnostics of **100+ FIX Sessions** and their messages across **10+ distributed FIX Engines**.
- Designed a high-throughput, event-driven message pipeline using **Redis Streams** and **Keyspace Notifications** to batch-process **1M+ FIX Messages daily** with zero data loss.
- Extended the FIX Monitor with **multi-engine tracking**, **dynamic session management**, and **runtime message configuration**, cutting deployment time by **90%** and eliminating application restarts.
- Optimized the message pipeline with **engine-level parallelism** using **multithreading** and **asynchronous execution**, reducing processing latency by **40%** during peak trading hours.
- Implemented **low-latency TCP socket communication** between the FIX Monitor and FIX Engines to enable continuous health checks and proactively detect connectivity failures.
- Built a modular FIX Message parser to extract and normalize tag-value pairs across **20+ FIX Message types** and multiple FIX protocol versions.
- Streamed real-time FIX system updates (such as session states, engine availability, and message flow) to monitoring dashboards using **SignalR hubs** and the **Publish-Subscribe pattern**, with minimal overhead.
- Secured APIs across microservices by integrating **IdentityServer (OAuth 2.0 / OpenID Connect)** for centralized authentication, **scoped token management**, and fine-grained **role-based access control (RBAC)**.

## TECHNICAL SKILLS

**Languages:** C++, C#, JavaScript, Python

**Backend:** .NET, Node.js, Express.js, RabbitMQ, SignalR, Socket.IO, REST API, GraphQL, AWS

**Frontend:** React.js, Redux, Context API, Bootstrap, HTML/CSS

**Databases:** MongoDB, Redis, Oracle Database, PL/SQL, Microsoft SQL Server, MySQL

**Developer Tools:** Git, Docker, Shell, GitHub Actions, Jira, Postman

## PROJECTS

**AutoBidder** | Node.js, Express.js, React.js, Context API, Socket.IO, YOLOv5 (PyTorch), MySQL, Docker, AWS Elastic Beanstalk, AWS RDS, Heroku

- Developed a full-stack **automobile auction platform** with real-time bidding and vehicle listings, providing a live virtual auction experience.
- Developed end-to-end features for user onboarding, auction flows, bidding, transactions, and complaint handling, with **JWT-based authentication**.
- Integrated a **YOLO-based license plate detection model** to verify listings and prevent fraud.
- Deployed the backend on AWS Elastic Beanstalk with **Docker** containerization, frontend on Heroku, and AWS RDS for MySQL database.