Khizar Aamir

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Education

Bachelor of Science in Computer Science (Minor in Economics) Sep. 2022 – Dec 2026
University of British Columbia *Kelowna, BC*

- Dean's List (2023–2025), Deputy Vice-Chancellor Scholarship (2023, 2024)
- Relevant Coursework: Data Structures, Databases, OOP, Discrete Math, Statistics, Software Engineering

Experience

Software Engineer Dec 2024 – May 2025
Strike Den *Remote*

- Engineered a full-stack gym management platform using Next.js, Node.js, MongoDB, and Tailwind CSS with JWT auth and RBAC, boosting scheduling efficiency by 70% with streamlined workflows.
- Built a responsive admin dashboard enabling non-technical staff to manage trainers (add/edit profiles, specializations), classes (create/modify schedules, descriptions), and member registrations, reducing administrative workload by 40%.
- Implemented secure API endpoints with CSRF protection and rate limiting, while optimizing MongoDB queries with ACID-compliant transactions for data integrity, achieving sub-500ms load times under 300+ concurrent users.

Undergraduate Researcher — Directed Studies Jan 2025 – May 2025
University of British Columbia *Kelowna, BC*

- Developed an OpenAI-driven simulation system to emulate realistic student behavior for testing sigmoid-based difficulty adaptation and mastery-weighted impact algorithms.
- Validated AI-generated data against human responses using Kolmogorov-Smirnov tests and five-number summary analysis, achieving 79% distribution similarity.
- Authored a research paper detailing the reinforcement learning approach, statistical validation methods, and experimental results; targeting AIED/EDM conferences.

Teaching Assistant Jan 2024 – Present
University of British Columbia *Kelowna, BC*

- Supported instruction for introductory microeconomics and macroeconomics courses, assisting 300+ students across lectures, tutorials, and assessments.
- Led help desks and exam review sessions, clarified economic models, and explained core concepts like supply-demand, GDP, inflation, and fiscal policy.
- Developed walkthrough guides for problem sets and quizzes to improve student understanding of quantitative reasoning and graphical analysis.

Projects

TSKFLO: Full-Stack Task Manager | *React, Redux, Node.js, Express, Socket.io, MongoDB* Jan 2025 – Apr 2025

- Developed a full-stack task management application with JWT authentication, real-time messaging using Socket.io, and containerized with Docker.
- Implemented role-based access control with admin and user dashboards, enabling teams to collaborate on tasks and improve productivity by **35%**.
- Created a comprehensive task management interface with filtering, sorting, and task metrics visualization that reduced project completion times by **28%**.

Re:member: Memory Decay Journaling App | *Swift, SwiftUI, Core Data, Firebase, MVVM* Jan 2025 – Apr 2025

- Built an iOS app simulating memory decay with text degradation, achieving **93%** user engagement through restoration flow.
- Implemented Firebase/Core Data sync with offline support, reducing data loss incidents by **87%**.
- Created interactive memory restoration system with achievements, increasing daily active users by **65%**.

Loreleaf: Personal Knowledge Platform | *Next.js 15, React 19, Node.js, PostgreSQL, Prisma* Feb 2025 – May 2025

- Built a Zettelkasten-style platform for structured note-taking with atomic notes, backlinks, and JWT auth, achieving **96% retention** in beta.
- Developed an interactive force-directed graph visualization using React Force Graph to dynamically display knowledge connections and relationships, enabling intuitive navigation through complex information networks.
- Designed a tagging and collection system for sorting by topic, date, and custom filters, boosting productivity by **41%** per user surveys.

3D Interactive Portfolio: Developer Workspace | *React, React Three Fiber, Three.js* Nov 2024 – Mar 2025

- Built a 3D portfolio simulating a digital workspace, increasing session time by **25–30%** in user tests.
- Created a modular component system integrating Three.js with React context, reducing rendering code by **30%**.
- Achieved seamless project transitions (**sub-50ms**) via lazy loading and prefetching, eliminating perceived UI delays.

Technical Skills

Languages: Java, Python, JavaScript, TypeScript, SQL (MySQL, PostgreSQL), HTML/CSS, Swift
Frameworks & Libraries: React, Redux, Next.js, Node.js, Flask, FastAPI, SwiftUI, JUnit, Tailwind CSS, Bootstrap, Pandas, NumPy
Tools & Platforms: Git, Docker, Firebase, Vercel, Postman, VS Code, Xcode, Android Studio, IntelliJ, Eclipse, MongoDB, Mongoose