

# SULTAN ALZOGHAIBI

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## TECHNICAL SKILLS

**Languages:** Java, TypeScript, JavaScript, Python, SQL, HTML/CSS, C, R  
**Frameworks:** Spring Boot, React, Next.js, Tailwind CSS, JUnit, Node.js, Motion  
**Libraries & Tools:** Git, Playwright, Figma, Aceternity-UI, Shadcn-UI, Visual Studio Code, IntelliJ, PyCharm  
**Cloud & Infrastructure:** AWS ECS Fargate, EC2, Docker, CloudWatch, Supabase, PostgreSQL

## EDUCATION

### University of Calgary

Calgary, AB

Bachelor of Science, Computer Science - GPA: 3.91 (Last Academic Year)

Sep. 2022 – Dec. 2026

Award: 2nd place out of 43 Teams | Div 2 | Alberta Collegiate Programming Competition 2024

### Relevant Courses

Programming in Python, Object-Oriented Programming in Java, Data Structures and Algorithms, Software Engineering

## PROJECTS

### Horizontally Scaling Matchmaking Distributed System | Java, JavaFX, Docker, AWS ECS Fargate, CloudWatch, AWS SDK

- Deployed a SearchServer that creates and pairs players to a dedicated GameServer on AWS ECS, resulting in **0 coupling** between matchmaking logic and each gameplay session.
- Implemented **dynamic warm pooling** using a `Queue<IpAddress>` per game mode, reducing matchmaking time by **99.1%** (~46s → 0.4s). The system **automatically scales up or down pool size** based on server load.
- Connected players using a **multi-threaded** `HashMap<gameMode, List<Player>>` structures and event-driven threads, enabling **concurrent matchmaking** across game modes with sub-**950ms** matchmaking latency under load.
- In GameServer and Player instances, **multi-threaded a chat feature** on a separate port with real-time free-flowing messaging running in parallel with strict turn-based sequencing, maintaining message latency below **280ms**.
- **Links:** [2min demo vid](#) | [GitHub](#) | [Portfolio site](#)

### OOP Pacman with Smart Ghost Pathing | Java, JavaFX

- Copied the Real Pacman ghost logic using JavaFX and OOP principles (inheritance, polymorphism, encapsulation), achieving **240 FPS** and a grade of **102.3%**.
- Led **85% of codebase**, building a synced GUI-2D array backend and made FigJam diagram to simplify teammate contributions., enabling project completion in **2 weeks**.
- Implemented Smart Ghost AI with HashMap pathing and linear distance targeting for **O(1)** move decisions.
- **Links:** [demo vid](#) | [GitLab](#) | [FigJam Planning](#) | [Portfolio site](#)

### Slack-Based Team Survey Platform (In Progress) | Java, Spring Boot, gRPC, PostgreSQL, Redis, Kubernetes, AWS EKS

- Building a distributed Slack-integrated survey system using Spring Boot and gRPC microservices, with plans to scale via EKS and load balancing for production-level fault tolerance. Expected completion spring 2025

## EXPERIENCE

### Full-Stack Developer

Jan 2025 – Apr 2025

TechStart Club | [Website](#) | [GitHub](#)

University of Calgary, AB

- Contributed to migrating from React with CSS to **Next.js with Tailwind CSS**, utilizing its SSR capabilities to improve SEO by an estimated **25%** and initial page load times by **30%**.
- Built a **Stripe API** integration using **GET/POST RESTful API** endpoints, reducing average transaction time by **2 minutes** compared to Google Forms and enabling new item additions with **0 coding** via Stripe's dashboard.
- Collaborated in an **Agile team of 5**, enforcing Git best practices to ensure **0 bugs are pushed to the main branch**, resulting in higher code quality and smoother releases.

### VP UX/UI Design

Aug 2024 – Apr 2025

TechStart Club

University of Calgary, AB

- Mentored by a graduate UX/UI designer on best design practices, then guided TechStart's project members in enhancing design skills, conducting user research, and implementing **AGILE UX/UI** processes, receiving an **83% positive feedback rate** on the support provided.