

Feiyu Lin

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Technical Skills

Programming Languages: C/C++, Java, JavaScript, Python, HTML/CSS/XML

Frameworks & Libraries: React, Next.js, Node.js, Express.js, Tailwind CSS, Framer, Clerk, shadcn-ui

Databases: PostgreSQL, Convex, MongoDB, MySQL, Firebase, SQLite

Developer Tools: Git, GitHub, Android Studio, Figma, Docker

Education

University of Ottawa

Sep. 2022 – Dec. 2026

Honours Bachelors in Computer Science (co-op)

- 3.9/4.0 GPA – 9.27/10 CGPA

Projects

Productivity Web App | *Convex, Next.js, React, shadcn-ui, Tailwind CSS, JavaScript*

- Developed a full-stack web-based document editor and file system aimed at maximizing workflow productivity
- Utilized Next.js file-based and **API routing** to establish efficient server-side endpoints, ensuring users to access specific documents and pages
- Engineered custom schema and used Convex's **mutation** and **query functions** to update user data in real-time
- Programmed a recursive algorithm to establish document hierarchy and allow file archive and restoration

Chess Engine (Grandmaster ELO) | *C++*

- Developed a **UCI Compliant** chess engine (rated at 2900) that can interface with other chess engines/GUIs
- Optimized move generation **speed by 5000%** through **bit manipulation** techniques and a bitboard data structure
- Engineered an algorithmic AI by implementing Negamax, Quiescence, and PV search algorithms, resulting in advanced decision-making capabilities
- Enhanced search algorithm through pruning techniques: alpha-beta, null-move, razoring; and memorization techniques: transposition table, zobrist hashing, hash move ordering achieving **10000x faster** searches
- Increased playing strength by embedding a **neutral network** to yield accurate positional evaluation

Portfolio Website | *Next.js, React, Tailwind CSS, Framer, JavaScript*

- Developed an engaging portfolio that visually communicates my experiences, project highlights, and skill set
- Efficiently animated and manipulated **DOM elements** by integrating Framer's motion and leveraging React's `useState`, `useEffect`, and `useRef` **hooks**
- Crafted elegant lamp effect by implementing dynamic gradient animations through pseudo-elements, opacity, and transformations
- Engineered parsing function that enables **conditional content rendering** of border animations, svg tracing, and modals upon mouse hover/click

Healthcare Management System | *Java, Firebase, XML, Android Studio*

- Developed an **Android app** in a team of 4 to facilitate healthcare appointment management
- Programmed **database queries** to efficiently store, retrieve, and update comprehensive doctor/patient information, ensuring a seamless data management system
- Fostered cohesive team collaboration through **Git** and **version control**, utilizing pull requests and branches.
- Crafted an engaging and user-friendly front-end UI by incorporating recyclers, pop-ups, and buttons

Experience

Math Instructor and Assistant Centre Director

May 2023 – Aug. 2023

Mathnasium of Pleasant View

- Demonstrated exceptional proficiency in teaching Grade 12 calculus and vectors
- Help students achieve **15% higher scores** on their tests
- Engaged with up to **6 students concurrently**, fostering an interactive and supportive learning environment
- Effectively managed scheduling logistics and adeptly coordinating, rescheduling, and organizing appointments