Feiyu Lin

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EDUCATION

University of Ottawa — Sep. 2022 – Dec. 2026
Honours Bachelors in Computer Science (co-op)
- 3.87/4.0 GPA – 9.2/10 CGPA

TECHNICAL SKILLS

Programming Languages: C++, Java, Python, JavaScript, HTML/CSS, XML
Developer Tools: Git, GitHub, Android Studio, VSCode
Libraries & Frameworks: SFML, Firebase, React, NumPy, Pandas, Pygame

PROJECTS

Chess Engine | *C++* — Feb. 2023 – Present
- Developed a **UCI Compliant** chess engine that can interface with other engines/GUIs
- Enhanced move generation **speed by 5000%** by representing board state using a **bitboard** data structure
- Engineered an **algorithmic AI** by implementing **Negamax, Quiescence, and PV search algorithms**, resulting in advanced decision-making capabilities
- Optimized game tree search by **10000x** through pruning techniques: **alpha-beta, null-move, razoring**; and memorization techniques: **transposition table, zobrist hashing, hash move ordering**
- Increased playing strength by embedding a **neutral network** to yield accurate positional evaluation

Healthcare Management System | *Java, XML, Firebase, Android Studio* — Sept. 2023 – Present
- Developed an **Android app** in a team of 4 to facilitate healthcare appointment management
- Leveraged **Firebase queries** to efficiently store, retrieve, and update comprehensive doctor/patient information, ensuring a seamless data management system
- Implemented **sophisticated algorithms** on the backend to enable the smooth execution of appointment-related actions, including booking, cancellation, and specialized appointment searches based on doctor specialties
- Crafted an engaging and user-friendly frontend UI by incorporating RecyclerViews, pop-ups, and buttons

Karnaugh Map Solver | *JavaScript, React, HTML/CSS* — Nov. 2023 – Present
- Designed a **responsive web interface** to generate and **solve Karnaugh Maps**
- Implemented the core algorithm to calculate **simplified boolean expressions** by identifying **prime implicants**
- Engineered an intuitive and user-friendly **cell-editing tool** for inputting of 1s, 0s, and Xs onto the grid
- Leveraged **React's useState hook** to dynamically reflect changes in **real-time** as users click on specific cells within the Kmap

2D Spaceship Shooting Game | *Java, Java Swing, OOP* — May 2022
- Programmed spaceship shooting game with user-based movement and fire control in **Java**
- Automated **dynamic tracking mechanisms** for enemies to target user spaceship
- Handled collision detection and sprite interactions with **Java Swing**
- Implemented various spaceships, enemies, ammunition types, and special power-ups using various **OOP** concepts

EXPERIENCE

Math Intructor and Assistant Centre Director — May 2023 – Sept. 2023
Mathnasium of Pleasant View
- Demonstrated exceptional proficiency in conveying math concepts ranging from addition/subtraction to **calculus and vectors**
- Developed and implemented **personalized learning strategies** tailored to each student's unique strengths and weaknesses, resulting in improved comprehension and performance
- Managed and engaged with up to **6 students concurrently**, fostering an interactive and supportive learning environment
- Managed scheduling **logistics**, efficiently coordinating, rescheduling, and organizing student appointments
- Maintained proactive **communication with parents**, providing regular updates on their child's academic development, milestones achieved, and areas for improvement