

Keith Lai



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(647) 624-8637 (Adding GitHub/LinkedIn later)

SKILLS

Languages: C++, Python, Java, C#, Turing, SQL, MySQL, HTML, CSS

Tools: Visual Studio, Excel, Eclipse, Solidworks, AutoCAD

PROJECTS

Email Server and Client (Java)

- Designed a functional email server and client allowing clients to send, receive and delete messages
- Implemented algorithms like selection sort optimize efficiency when user manipulates emails
- Incorporated data structures like trees, linked lists and hierarchies to arrange an email message appropriately
- Developed a Graphical User Interface that simulated a personal email using Java's Abstract Window Toolkit

Book Ordering Web Form (C#, MySQL, ASP.NET, HTML)

- Implemented a book ordering system with CRUD operations using ASP.NET
- Designed a database in MySQL to store order, customer, and book information using database normalization to reduce data redundancy
- Integrated object-oriented programming through the creation of a data access layer

Tic Tac Toe AI (Python)

- Formulated an unbeatable Tic Tac Toe AI using minimax algorithm
- Reduced AI computation time by 90% through alpha-beta pruning search algorithm

Goose Escape Game (C++)

- Constructed a 2-D arcade escape game using various BearLibTerminal libraries
- Collaborated with a partner to implement object-oriented programming, randomization features, and an effective goose chase algorithm to maximize movement

Sudoku Solver (Python)

- Created a script that solves a sudoku puzzle using backtracking algorithm

Work Experience

Mathematics Tutor - Triway Education, Richmond Hill

- Taught students the mathematics curriculum for their designated grade
- Worked with colleagues to develop a thorough lesson plan that adapted to the tutee's needs

Education

University of Waterloo, Candidate for BAsC in Mechatronics Engineering:

Sept 2020 - May 2025

Relevant Courses: Digital Computation (C++), Data Structures and Algorithms (C++), Term GPA of 4.0