

Jacob Lee

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EDUCATION

Western University

Honors Specialization in Computer Science

London, ON

Expected Graduation, May 2027

Relevant Coursework: Linear Algebra, Calculus II, Data Structures & Algorithms, Computer Science

Fundamentals II: Object-Oriented Programming in Java, Applied Logic for CompSci, Data Science, Discrete Structures for Computing, Computer Organization and Architecture, Software Tools & Systems Programming

PROJECTS

Salary Prediction using Linear Regression | Jupyter Notebook, Python, Pandas, NumPy, Kaggle January 2025

- Developed a basic machine learning linear regression model using NumPy, implementing key concepts such as gradient descent, least squares and matrix operations
- Preprocessed and used data visualization on Kaggle's dataset using Pandas and Matplotlib where the model predicted the salary based on years of experience, achieving an R^2 score of 0.94 with strong model performance with optimal Mean Absolute Error, Mean Square Error, and Root Mean Square Error values

Reminder Management System | C, Unix/Linux, Makefile, Shell Scripting, File I/O December 2024

- Designed a multi-file C program using linked lists to dynamically & efficiently manage monthly reminders
- Automated compilation using Makefile and deployed the system on a Unix server via SSH, ensuring efficient development and reliable performance
- Established a fully modular & reusable codebase, reducing development and debugging time significantly

DFS Maze Solver | Java November 2024

- Engineered a Depth First Search (DFS) algorithm to solve a gamified maze featuring a coin-based door unlocking logic system, efficiently explored paths & managed limited amount of coins to solve the maze
- Modeled the maze as an undirected graph using an adjacency matrix (rooms as nodes, corridors as edges)

Ordered Dictionary Implementation | Java October 2024

- Developed an ordered dictionary using a Binary Search Tree to store and manage dictionary entries
- Implemented operations such as adding, removing, and listing entries via a text based user interface (UI)
- Designed key and record classes to store metadata and data, with each BST node storing a record that includes the key and associated data (i.e., Images, Audio, Videos, Gif, Webpages)

EXPERIENCE

STEM Camp

Camp Counselor

Kitchener, ON

July 2024 - September 2024

Led STEM-related activities for 150+ campers of various ages, resulting in a positive learning environment that fostered communication, leadership and critical thinking skills.

City of Kitchener

Instructor Lifeguard

Kitchener, ON

October 2022 - July 2023

Used a strong knowledge of water safety protocols and teaching methods to deliver engaging swimming lessons and water safety skills to over 120+ swimmers, resulting in increased confidence and skill proficiency across a wide range of age groups.

Volunteer Tutor

Tutor

Kitchener, ON

September 2022 - December 2022

Provided academic support to secondary students, identifying strengths and areas for improvement to enrich their learning experience in Programming, Mathematics, Physics, Chemistry and Biology.

SKILLS

Programming Languages: Python, C, Java, HTML, CSS, Makefile, Shell Scripting

Developer Tools: Visual Studio, Eclipse, Jupyter Notebook/Labs, PyCharm, Unix/Linux, Figma, Godot, Git, GitHub, GitLab, LaTeX

Libraries: Pandas, NumPy, Matplotlib, Seaborn, Scikit-learn, Java Swing