Abdulkader Alturkmani

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Education

University of Toronto Sep 2023 - May 2027

Bachelor of Science, Geospatial Data Science Major & Applied Statistics, Computer Science Minor

- **Relevant Coursework**: Spatial Data Science, Introduction to Computer Science, Probability and Statistics, Multi variable Calculus, Linear Algebra, Introduction to Geospatial Information Science, Mathematical Proofs, Integral and Differential Calculus.

Projects

Phone Billing & Call Visualization | *Python, Pygame*

- Built a Python billing engine to parse call logs, manage contracts, and visualize routes.
- Designed customer, contract, and phone-line models to track usage and compute monthly bills
- Integrated interactive filters to explore calls by customer, duration, and location in a Pygame UI.

Treemap Filesystem Visualizer | *Python, Data Structures*

- Developed a treemap visualizer with a recursive tree model for proportional, interactive filesystem views.
- Implemented a rectangle subdivision algorithm to allocate screen space by subtree data size.
- Added click-based expand/collapse and hit-testing to map mouse input to filesystem nodes.

Java Paint Application with AI Integration | *Java, JavaFX, Ollama API*

- Developed a Java Paint application with a GUI for creating and editing multiple geometric shapes.
- Implemented undo/redo, duplication, clipboard operations, and adjustable color and stroke thickness.
- Integrated AI through the Ollama API to enable prompt-based image generation and editing features.

Othello Game AI | *Java, Object-Oriented Design*

- Designed an 8x8 Othello engine with turn management, move validation, token counting, and winner detection.
- Built a greedy AI that evaluates candidate moves using directional flip counts to maximize captured tokens.
- Added controller modes including human vs greedy AI, human vs random AI, and random vs random gameplay.
- Validated correctness using unit tests for moves, player actions, and overall game flow.

CS50 Memory Card Game | *Python*

- Built a memory card matching game from scratch in Python as the final project for Harvard's CS50P course.
- Implemented game logic for card shuffling, matching detection, and score tracking.
- Applied object-oriented programming principles learned through the CS50P problem sets.

Certificates

CS50P – Introduction to Programming with Python | *Harvard University (edX)* Dec 2023 – Apr 2024

- Completed 9 programming problem sets covering Python fundamentals, data structures, and object-oriented programming.
- Developed a full Python application as the final project, applying course concepts to a complete software system.

Schulich Business Excellence Academy (SBEA) | *Schulich School of Business* Jul 2022

- Completed an intensive program focused on leadership, entrepreneurship, and business fundamentals.
- Collaborated in case-based discussions and workshops led by Schulich faculty and industry professionals.

Technical Skills

Programming Languages: Python, Java, HTML, CSS, JavaScript
Frameworks & Libraries: React, JavaFX, Pygame, Ollama API
Tools: Git, GitHub, VS Code
Concepts: Object-Oriented Programming, Data Structures, Algorithm Design, Web Development, Responsive Design, Interactive UI Development