# GABRIEL SMITH

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## SUMMARY

I am a computer science student at the University of Toronto with a strong foundation in programming, specifically data structures, algorithms, and artificial intelligence. I am passionate about technology and innovation, eager to learn new skills, and ready to apply them to real-world challenges. Currently, as a Customer Service Representative at Farm Boy, I excel in providing customer service, preparing ready-to-eat meals, and maintaining a clean and safe work environment.

## EXPERIENCE

**Student**
September 2022 - Present

- **University of Toronto** | Mississauga, Ontario
  - Designed algorithms incorporating many data structures like graphs, flows, trees, etc.
  - Created AI using search algorithms like minimax, backtracking, A*, AC-3.
  - Designed Java projects with a focus on user accessibility using Google Cloud APIs to include voice recognition, TTS, and translation.
  - Analyzed complex datasets using R to extrapolate and interpolate data.
  - Developed comprehensive unit tests and PyTests, covering all edge-cases ensuring precision.
  - Conducted code reviews to optimize algorithm performance, ensuring adherence to coding standards.

**Customer Service Representative**
07/2024 - Present

- **Farm Boy Inc.** | Ontario, Canada
  - Provide exceptional customer service, addressing customer inquiries and resolving issues promptly and courteously.
  - Maintain a clean and organized work area, following health and safety regulations.
  - Assist with inventory management, including stocking supplies and monitoring product freshness.
  - Collaborate with team members to ensure efficient workflow and a positive shopping experience for customers.
  - Offered assistant manager and supervisor titles within a few weeks of employment due to my work ethic and delegation skills.

**Assembler**
08/2021 - 09/2021

- **Dana Incorporated** | Oakville, Ontario, Canada
  - Assembled mechanical and electronic components for automotive products, meeting daily production targets efficiently and achieving minimal production errors.
  - Maintained high quality standards for products by conducting quality checks regularly, achieving a high accuracy rate with zero- defects

**Order Picker**
07/2021 - 08/2021

- **Wallace & Carey Inc.** | Oakville, Ontario, Canada

- Executed daily order fulfillment duties utilizing a warehouse management system, picked and packed product and maintained high accuracy on order shipments.
- Assisted in the packaging of over hundreds of products per week
- Operated machinery such as pallet jacks, safely transporting materials around the warehouse
- Collaborated with team members to meet tight deadlines, consistently completing projects ahead of schedule.

**HMR Clerk**
09/2023 - 07/2024

- **Loblaws Inc** | Ontario, Canada
  - As an HMR Clerk at Loblaws Supermarket, I excel in customer engagement, guiding patrons to select quality meal options. My role involves meticulous food preparation, ensuring adherence to safety standards. I effectively manage inventory, optimize stock levels and minimize waste.

## PROJECTS

**Roguelike Game**
June 2024 - Current

- • Developing a Vampire Survivors-esque game using Unity.
  - Contains procedural map generation, multiple enemies, characters, weapons, etc all using pixel art.
  - Employed some optimization strategies to support an infinitely generating map.

**Battleship Solitaire AI**
November 2024 -November 2024

- **University of Toronto**
  - Implemented Battleship Solitaire AI by framing it as a constraint satisfaction problem using Python to maximize solution efficiency.
  - Executed forward checking and domain pruning using AC-3 algorithm, enhancing AI problem-solving capabilities.
  - Engineered solutions using enhanced backtracking search and forward checking with MRV heuristic.

**Checkers AI**
October 2024 - October 2024

- **University of Toronto**
  - Engineered an advanced Checkers AI, implementing a Minimax algorithm with alpha-beta pruning.
  - Designed a user-friendly interface for the checkers game employing PyGame library and object-oriented programming techniques.

**Klotski AI**
September 2024 - September 2024

- **University of Toronto**
  - Created a framework for the game using object oriented programming.
  - Implemented Klotski AI solver utilizing game state search.
  - Employed A* search algorithm with a heuristic based on Manhattan distance.

**Text Adventure Game**
November 2023 - December 2023

- **University of Toronto** | github.com/gabrielsmith1874/My-Projects/tree/main/Adventure%20Game
  - Developed a text-based adventure game utilizing natural language processing to enhance user accessibility and engagement.
  - Integrated advanced Google Cloud APIs, enabling seamless voice recognition and multilingual support through natural language processing and MaryTTS, broadening

accessibility to visually impaired and non-English speaking players.
- Developed dynamic game mechanics utilizing object-oriented principles and incrementally modified framework to enhance gameplay experience.
- Facilitated regular team sprints and meetings within Agile framework evolving a game prototype.

**Huffman Compression / Decompression**
June 2023 - May 2023

- **University of Toronto** | github.com/gabrielsmith1874/My-Projects/tree/main/huffman
  - Implemented efficient Huffman compression and decompression algorithms in Python, optimizing for both speed and memory usage across diverse datasets.
  - Achieved over 80% compression rate by designing and implementing Huffman encoding.
  - Developed robust decompression algorithms maintaining 100% accuracy, ensuring no data loss post-decompression.

## EDUCATION

**Bachelor's degree in Computer Science and Statistics**

- **University of Toronto Mississauga**
  Mississauga, Ontario • 09/2022 - 04/2027

## COURSEWORK

**Introduction to Artificial Intelligence**
2025

- **University of Toronto** | Python
  - Learned a variety of AI search techniques including A*, DFS, BFS, backtracking search incorporating forward checking and AC-3, Minimax and more.

**Data Structures and Analysis**
2024

- **University of Toronto** | Python
  - Developed data structures to solve real world tasks under certain complexity constraints Proved correctness and time complexity of algorithms.

**Software Tools and Systems Programming**
2024

- **University of Toronto** | C
  - Developed software and text-based games using C Created a shell framework with support for piping, redirection, execution etc.
  - Created a server to run a multiplayer text turn-based game using select().

**Software Design**
2023

- **University of Toronto** | Javascript
  - Worked on a large project in a small group Learned about UML diagrams, scrums, waterfall and general collaboration skills Focused on adding accessibility features to games.

**Computer Organization**
2023

- **University of Toronto** | Assembly
  - Learned how code is assembled by an assembler Coded Sokoban using assembly and basic I/O like a light board and D-PAD Read and operated on binary, octary, and hexary.

## SKILLS

Algorithm Design, C, C#, Java, Object Oriented Programming, Python, Assembly, Time/Correctness Analysis, Artificial Intelligence