EDWARD SWORD

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Summary

Computer Science graduate with a Master's degree and 4.0 GPA from Toronto Metropolitan University. Skilled in Python, C++, full-stack development, AI/ML, and data analysis. Experienced in teaching, academic research, and building practical tools and algorithms. Strong communicator with a passion for emerging technologies.

Skills

- Proficient in Python, C++, Java, JavaScript, and SQL
- Full-stack web development with HTML, CSS, React, and Node.js
- Experience with Microsoft Azure cloud services
- Knowledge of supervised/unsupervised learning and AI heuristics
- TensorFlow, Scikit-learn, Pandas, NumPy, and PyPlot
- Strong data analysis and visualization abilities
- Solid problem-solving and algorithm design skills
- Clear communicator and effective team collaborator
- Familiar with Agile, Git, and project management tools
- Fast learner with a passion for emerging technologies

Education

Bachelor of Computer Science - Toronto Metropolitan University   August 2023
   Double Minor in Information Technology Management & Psychology

                                                                                   GPA 4.0
Master's Degree in Computer Science - Toronto Metropolitan University   December 2025

Work Experience

Graduate Teaching Assistant - Toronto Metropolitan University   September 2023 - Current
- Assisted professors by grading assignments, exams, presentations, and projects across multiple computer science courses
- Invigilated midterms and final exams to ensure academic integrity
- Prepared and led weekly lab sessions; taught core concepts, provided examples, and offered one-on-one support to students
- Helped students grasp challenging material, contributing to improved class performance and engagement

ACADEMIC PROJECT EXPERIENCE

Bounded Suboptimal Backtracking Beam Search C++   Sept. 2024 - Current
- Developed the WIEDBBS algorithm combining features of backtracking beam search.
- Integrated multiple strategies including F-cost and distance-to-go sorting, random walks, and advanced pruning techniques.
- Conducted experiments across classic AI domains such as the Sliding-Tile Puzzle, Pancake Sorting Problem, and Grid/Map Exploration.
- Demonstrated performance improvements by achieving a balanced trade-off between depth-first and breadth-first search approaches.

CDC Diabetes Health Indicator Python   April 2024
- Analyzed CDC diabetes health indicator dataset using various machine learning models to predict diabetic conditions.
- Applied oversampling techniques to address severe class imbalance skewed toward healthy individuals.
- Achieved 86% accuracy and 87% F1 score using a deep neural network with 5 hidden layers of 90 neurons each.
- Achieved 95% accuracy and 95% F1 score using a Random Forest Classifier, significantly outperforming baseline models.

Interactive Educational Network Routing Visualizer. Python, JavaScript, HTML, CSS   April 2023
- Built an interactive visual tool for demonstrating routing algorithms used in computer networks.
- Users can add, remove, rename, and modify nodes and edges in a dynamic graph interface.
- Implemented Dijkstra's and Bellman-Ford algorithms with step-by-step color-coded visual feedback to enhance learning outcomes.