DIANA BREBEANU

3B Computer Science | ID: 20948155 | dbrebean@uwaterloo.ca | Diana Brebeanu | dbaitech | (416) 540-5388

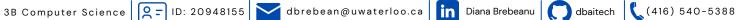## SUMMARY OF QUALIFICATIONS

- 4 years of computer programming experience highlighted by my ownership of research projects, client work and excellent coursework
- Solid object-oriented programming skills in Python, C++, C, Java, JavaScript, SQL and experience with algorithms and design patterns
- Creative and analytical mindset suited to working in a fast-paced environment, strong attention to detail and fast learner

SKILLS

Languages: Python, C++, C, Java, JavaScript, SQL, HTML/CSS, Bash, Scheme, UML
Technologies: PostgreSQL, MySQL, Unix, Git, React, Angular, Node.js, Express.js, Docker, Cypress, Postman, Swagger
Soft Skills: Problem-solving, adaptability, self-motivated, collaboration, time management, fluent in English, French and Romanian

EXPERIENCE

University of Waterloo — Waterloo, ON
Undergraduate Research Assistant — September, 2023 – December, 2023

- Contributed to research in **Lateral Reading**, **Information Retrieval**, and **Natural Language Processing** under the guidance of Dr. Mark Smucker and PhD candidate Dake Zhang
- Implemented a retrieval algorithm using **PyLucene**, **Pyserini**, and BeautifulSoup4 libraries on **general-purpose clusters** to filter crawled articles to create a proper testing dataset for evaluating new Lateral Reading tools developed for a conference

DNAstack — Toronto, ON
Full Stack Software Engineer — January, 2024 – April, 2024

- Contributed to **Workbench** product used by bioinformaticians to create and execute workflows across **federated databases** using WDL
- Engineered new CLI options using **Python** to display content with file content type validation, downloading, and zipping functionalities
- Enhanced **Java Spring Boot 3** back-end by implementing pagination logic and streaming for API responses, adding the Validator pattern and ensuring code quality through unit testing with Mockito
- Refactored front-end component logic in **Angular** and implemented Jasmine unit tests

McAfee — Toronto, ON
Software Engineer, Design Systems Team — May, 2023 – August, 2023

- **1 of 9** interns selected globally for McAfee's Summer Intern program
- Refactored and authored features for an internal automation product using **Node.js** and an **external API**; documented using **Confluence**
- Developed a new **React** component to enhance the design system and optimized existing components to improve processing speed
- Published and managed design system repositories to the company artifactory enabling teams to access the newest design assets

Filament AI — Toronto, ON
Junior Analyst — September, 2022 – December, 2022

- Created a dynamic web application using **React, Node.js, Express.js and MySQL** that streamlines the process of configuring a mock server through auto-generating **REST API** responses according to **Swagger** API documentation
- Authored and presented educational sessions for automating end-to-end testing of ML pipelines using mock servers
- Investigated mapping data flows and pipelines with **Microsoft Azure Data Factory** to automate data gathering from various sources
- Developed a real-time performance monitoring dashboard using Retool, MySQL and Node.js

RELEVANT COURSES & PROJECTS

Scotiabank Data Science Discovery Days – BERTopic, NLTK, Gensim

- Employed **Guided Topic Modeling** to categorize Scotiabank mobile app customer reviews into 20 topics based on popularity while mitigating rogue data infiltration
- Analyzed grouped reviews and ratings to create a report outlining identified customer pain points and app suggestions

IBM's Machine Learning with Python – NumPy, SciKitLearn, Pandas, MatPlotLib

- Analyzed fundamental algorithms of **machine learning** including **linear classification** (SVM, logistic regression), **regression**, **classification** (KNN, decision trees, regression trees) and **clustering** (k-means) techniques using Python

Algorithms, Data Structures and Data Management – C++

- Studied and implemented major algorithmic design paradigms (Dynamic Programming, Greedy, BFS, DFS, Divide-and-Conquer), data structures (priority queues, sorting, dictionaries, text processing) and techniques to assess their efficiency

Object-Oriented Software Development – C++, Bash, Linux, Valgrind, GDB

- Designed object-oriented projects using **design patterns** (decorator, iterator, observer, visitor, MVC) and **ADTs** (linked lists, binary search trees, stacks, queues) in C++ and planned with UML class models

EDUCATION

University of Waterloo — 2021 – 2026
Candidate for Bachelor of Computer Science, Artificial Intelligence Specialization

- University of Waterloo President's Scholarship of Distinction awarded for an admission average of 98%
- WiCS Early Research Experience Award
- Computer Science Club Event Coordinator and Founder of CxC Summit from January - August 2022