

# Valareza Arezehgar

Toronto, ON, Canada

🌐 portfolio | 🌐 linkedin | 🌐 github | valareza.arezehgar@gmail.com | +1 (647) 823-1344

## EDUCATION

### Toronto Metropolitan University

Sep 2020 – Jun 2025

Bachelor of Science (Honours), Computer Science, Minor in Mathematics • GPA: 4.22/4.33

Toronto, ON, Canada

**Relevant Coursework:** Data Structures & Algorithms, Discrete Mathematics, Database Systems, Operating Systems, Unix and C/C++, Computer Networks, Software Engineering, Data Science

## SKILLS

**Core Skills** Agile, Android Development, Arduino, Linux/Unix, TCP/IP, Web Development, Relational Database Systems, Object-Oriented Programming

**Libraries** Angular, React, React Native, Flask, Flutter, jQuery, Bootstrap, Pandas, NumPy, Scikit-learn, JUnit

**Tools** Docker, Postman, Git, GitLab, Oracle Database, Jira, Jenkins, Maven, Vim, Unity, Bash, NPM, Express.js, Homebrew, Node.js

**Languages** Java, C/C++, Dart, JavaScript, TypeScript, Python, Ruby C#, SQL, MATLAB, HTML/CSS

## EXPERIENCE

### Environment and Climate Change Canada

Oct 2023 – May 2024

Part-Time Software Developer

North York, ON, Canada

- Resolved a long-standing regex parsing issue in a Java data decoder, reducing manual configuration steps by 50%.
- Collaborated with devops teams to prevent 15+ critical issues from reaching production by leading integration testing across frontend-backend workflows, API-database interactions, and inter-service communication.

### Environment and Climate Change Canada

May 2022 – Aug 2023

Software Developer Intern

North York, ON, Canada

- Wrote Python and Bash scripts to automate the migration of 100,000 structured files during server infrastructure upgrade, ensuring consistency and minimal intervention.
- Built a responsive Angular UI with NgRx and RxJS for live English/French data entry and preview, enhancing forecaster UX.
- Built an Object-Oriented Java data processing pipeline to convert daily XML/JSON ice forecasts into Marine Text Bulletins, automating 700+ annual reports and delivering them via time-limited internal APIs in seconds.
- Implemented comprehensive JUnit 5 tests to validate core XML/JSON conversion logic, ensuring accurate bulletin generation and achieving over 80% code coverage.

## NOTABLE PROJECTS

### LUNA - Founder & CTO

Feb 2025 – Present

Assistive Wearable Device

Toronto, ON, Canada

- Developed an assistive glasses attachment using Claude 3.5 OCR and Google Cloud TTS APIs for real-time audio narration.
- Engineered PlatformIO C++ firmware on ESP32 for boot-time Wi-Fi provisioning, button-triggered camera streaming, and deep-sleep management with haptic feedback.
- Built a React Native companion app to manage network and BLE connectivity for live OCR processing.
- Won 1st place at Qhacks 2025 (\$2,440) and placed top 6 at Hult Prize Canada 2025.

### Bank Statement Encryption (BSE) Protocol

Feb 2021 – Feb 2021

Flutter App

Toronto, ON, Canada

- Created a secure offline PDF workflow Flutter app with keystore-guarded decryption and biometric access.
- Prototype won \$2,120 CAD at UofTHacks VIII for enhancing electronic bank statement security.

### Undergraduate Thesis: Planning and Search in AI

Oct 2024 – Apr 2025

Toronto Metropolitan University

Toronto, ON, Canada

- Executed thousands of search experiments across optimal and weighted A\* variants, using Python and R to surface quantitative insights into how bounded suboptimality impacts runtime and heuristic performance.
- Implemented two novel admissible heuristics in C++ for an Object-Oriented research planning framework, outperforming baselines in 90% of tasks.
- Containerized the framework for consistent, cross-platform setup eliminating environment issues and cutting set up time by over 99%.