

NIKOLETT TOTH

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EDUCATION

University of Guelph

Bachelor of Computing

Bachelor of Environmental Sciences

Guelph, ON

September 2023 - Present

September 2018 - April 2023

Awards: *Board of Governor's Scholarship, J.D. MacLachlan Scholarship, Robert Harcourt Scholarship*

SKILLS

Languages: Python, JavaScript, Java, C#, C, R, HTML/CSS, SQL

Frameworks & Libraries: React, Django, Flask, Spring Boot, Pandas, NumPy, ggplot2

EXPERIENCE

Software Developer Intern

CanN2ONet

October 2025 - Present

Guelph, ON

- Designing a relational database and modular ETL pipelines for processed micrometeorological time-series data (CO₂, N₂O) collected across multiple monitoring sites.
- Developing a scalable data framework in Python (pandas, SQLAlchemy) to support an eventual public-facing web portal and future expansion across regions.

Software Developer Intern

GHD

May 2025 - August 2025

Waterloo, ON

- Built full-stack Python desktop application for radioactive contamination analysis with interactive GUI, ETL pipeline (pandas/NumPy), and dynamic Matplotlib visualizations featuring multi-parameter filtering.
- Developed Excel add-in using C#/.NET and Add-in Express to perform statistical analyses (t-tests, regression, prediction limits, etc.) directly on spreadsheet data, using Azure DevOps for version control and project management.

Undergraduate Research Assistantship

University of Guelph

April 2024 - April 2025

Guelph, ON

- Applied unsupervised and supervised machine learning techniques to environmental DNA data in R, using association rule mining and classification models to identify how environmental conditions influence eDNA detection and persistence.
- Evaluated predictive models using cross-validation, achieving 81.7% accuracy with precision and specificity exceeding 88%.
- Published the RulesTools R package on CRAN, providing custom functions for discretization, rule comparison, and visualization (Euler plots, heatmaps) to streamline association rule mining workflows.
- Co-authored research paper on association rule mining for eDNA detection, preparing for submission to a peer-reviewed journal.

Teaching Assistant

University of Guelph

September 2023 - December 2024

Guelph, ON

- Taught Structure and Application of Microcomputers, covering data representation, computer architecture and ISA design, memory management, assembly programming (control flow, subroutines, recursion, stack management), interrupt handling, and I/O systems.
- Taught Introduction to Programming in C, covering Linux/Unix command line, variables, functions, control flow, recursion, file I/O, and foundational data structures.
- Led weekly labs and office hours for debugging support and technical mentorship; graded all course assignments and exams.