

NATHALIE REDICK

📍 Davis, CA | 📞 +1 (518) 410-4084 | ✉ nredick@ucdavis.edu | [in nredick](#) | [🌐 nredick](#) | [🆔 0009-0005-5028-5299](#)

EDUCATION

University of California, Davis, Davis, CA | MSc Geophysics 3.89/4.00 | September 2024 – June 2026
Thesis: *Understanding Seismic Anisotropy Observations in the Context of 3D Slab-Induced Flow in the Cascadia Subduction Zone*
McGill University, Montreal, QC | BA Computer Science 3.75/4.00 | September 2019 – August 2023
– Minor in Earth & Planetary Sciences, Supplementary Minor Concentration in Computer Science (Machine Learning)

WORK EXPERIENCE

Technology Analyst @ Morgan Stanley Montreal, QC | July 2023 – August 2024
– Worked collaboratively to provide agile metrics analysis for internal dev. teams globally, user support, & documentation.
– Utilized DB2 SQL, MongoDB, & Python to process metrics & maintain project infrastructure.

Data Science Intern @ Esri Canada Remote | May – August 2022
– Automated a workflow for updating national hydrography data using the Multi-Task Road Extractor deep learning model.
– Designed new input image layers & geomorphological indicators that improved the baseline model accuracy by ~4%.

RESEARCH EXPERIENCE

Machine Learning For Geospatial Analysis @ McGill University Montreal, QC | September 2022 – July 2024
– Designed a guided machine learning workflow for geospatial analysis.

Using U-Net to Identify Landslides @ McGill University Montreal, QC | May 2021 – August 2022
– Implemented an image segmentation ML model to identify landslides using geophysical & morphological indicators.

SERVICE & LEADERSHIP

Field Trip Activity Leader @ UC Davis Davis, CA | February 2025
– Facilitated an interactive learning activity in the rock garden for visiting 6th-grade students.
– Engaged students in educational discussions and hands-on experiences about characteristics of the 3 major rock types.

AWG Student Mentor @ Association of Women Geoscientists (AWG) at UC Davis Davis, CA | January 2025 – Present
– Assist a student in learning new skills, building job applications & resumes; discussing the science field & graduate school.

Datalab Affiliate @ UC Davis Datalab Davis, CA | October 2024 – Present
– Participate & assist in workshops related to data science & computational pedagogy.

Vice President of Communications @ The Montereian Society Montreal, QC | September 2020 – April 2023
– Managed communications for the undergraduate student council for Earth & Planetary Sciences at McGill University.

TEACHING EXPERIENCE

GEL 1: The Earth (TA), UC Davis April – June 2025
– Led 1 hr/week of discussion on introductory earth science concepts.

GEL 101L: Structural Geology Lab (TA), UC Davis January – March 2025
– Led 6 hours a week of lab on upper-division undergraduate structural geology concepts & field techniques/mapping.

Instructor Training: Introduction to Computational Pedagogy @ UC Davis Datalab Davis, CA | December 2024
– Two-day workshop on evidence-based teaching, inclusive pedagogy, and instructional design for computational skills.

GEL 50L: Physical Geology Lab (TA), UC Davis September – December 2024
– Led 6 hours a week of lab on introductory geologic concepts & field techniques.

SKILLS & CERTIFICATIONS

Programming Languages: Python, Julia, C/C++, Java, DB2/SQL/MySQL, R, Bash, MATLAB, HTML/CSS, OCaml, (MIPS) Assembly
Tools: Git, Linux/Unix, LaTeX, Jupyter, HPC, Slurm, RESTful APIs, MongoDB, Jira, Jenkins, Liquibase, QGIS/ArcGIS, ASPECT, Paraview
Wilderness First Aid, Sierra Rescue (Expires November 2027) November 2024
Epinephrine Auto-Injector Administration, Sierra Rescue (Expires November 2026) November 2024
Adult Child Infant CPR/AED & First Aid, Sierra Rescue (Expires November 2026) November 2024

AWARDS

Bogo Hack, MAIS Hacks 2022 2022
Best AI Hack for Art, MAIS Hacks 2021 2021
Geotop 2021 Scholarship Competition, Geotop (\$1500) 2021
Best Overall Hack, MAIS Hacks 2020 2020
Alma Mater Scholarship, McGill University (\$3000) 2019

PUBLICATIONS & PRESENTATIONS

Redick, N. R., Tarling, M. S., & Kirkpatrick, J. D. (2024). Code-Free Deep Learning for Geospatial Applications. <https://agu.confex.com/agu/fm23/meetingapp.cgi/Paper/1366363>
Redick, N. R. (2023a, April 4). Building an Accessible Machine Learning Workflow for Geospatial Analysis. <https://escholarship.mcgill.ca/concern/presentations/2n49t738j?locale=en>
Redick, N. R. (2023b). A Review of Pumice Raft Formation Environments, Saturation, and Dispersal Mechanisms. *McGill Science Undergraduate Research Journal*, 18(1), B19–B25. <https://doi.org/10.26443/msurj.v18i1.187>