

NATHALIE REDICK

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

EDUCATION

University of California, Davis , <i>Davis, CA</i> MSc Geophysics	4.00/4.00 September 2024 – June 2026
McGill University BA Computer Science <i>Montreal, QC</i>	September 2019 – August 2023 3.75/4.00
– Minor in Earth & Planetary Sciences , Supplementary Minor Concentration in Computer Science	

EXPERIENCE

Technology Analyst @ Morgan Stanley – 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.	<i>Montreal, QC</i> July 2023 – August 2024
Data Science Intern @ Esri Canada – 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%.	<i>Remote</i> May – August 2022
Software Engineering Intern @ Blue Spiral Interactive/Albany IT Group – Improved in-house marketing analysis software by working with a team to build a RESTful API for visualising data. – Self-taught Python, Git, & QGIS during the internship. Used parallel computing to reduce execution time by 97% .	<i>Saratoga Springs, NY</i> June – August 2019
Software Development Intern @ Garnet River, LLC – Evaluated the efficacy & usability of computer vision products from Microsoft, Google, & AWS.	<i>Saratoga Springs, NY</i> February – June 2019

RESEARCH

Machine Learning For Geospatial Analysis @ McGill University – Designed a guided machine learning workflow for geospatial analysis.	<i>Montreal, QC</i> September 2022 – July 2024
Using U-Net to Identify Landslides @ McGill University – Implemented an image segmentation ML model to identify landslides using geophysical & morphological indicators.	<i>Montreal, QC</i> May 2021 – August 2022

AWARDS

Geotop 2021 Scholarship Competition , Geotop (\$1500) – Selected based on my research proposal to <i>Use ML to Identify Landslides</i> & academic performance.	2021
Alma Mater Scholarship , McGill University (\$3000) – Entrance bursary to McGill University for academic excellence.	2019

EXTRA-CURRICULARS

AWG Student Mentor @ Association of Women Geoscientists (AWG) at UC Davis – Assist students in learning new skills, building job applications & resumes; discuss the science field & graduate school.	<i>Davis, CA</i> January 2024–Present
Datalab Affiliate @ UC Davis Datalab – Participate & assist in workshops related to data science & computational pedagogy. – Help maintain the affiliated KeckCAVE Virtual Reality research lab in the Earth & Planetary Sciences department.	<i>Davis, CA</i> October 2024–Present
Vice President of Communications @ The Montereian Society – Managed communications for the undergraduate student council for Earth & Planetary Sciences at McGill University.	<i>Montreal, QC</i> September 2020 – April 2023

PROFESSIONAL DEVELOPMENT

Instructor Training: Introduction to Computational Pedagogy @ UC Davis Datalab – Two-day workshop on evidence-based teaching, inclusive pedagogy, and instructional design for computational skills. – Strategies for teaching students from non-computational backgrounds, designing inclusive learning environments, and adapting to in-person/virtual/hybrid formats.	<i>Davis, CA</i> December 2024
SCIWS12 Tutorial on Machine Learning & Deep Learning @ American Geoscience Union – Attended a full-day technical workshop on machine learning & deep learning for the environmental & geosciences.	<i>Virtual</i> December 2020
Accelerated Introduction to ML @ McGill Artificial Intelligence Society – Selected through a technical interview to participate in a 10-week accelerated course of ML. – Webscraped data to train a CNN to classify rock/mineral/fossil sample images into 4 classes; deployed as a webapp.	<i>Montreal, QC</i> January – April 2020

SKILLS

Programming Languages: Python, Julia, C++, C, Java, DB2/SQL/MySQL, R, Bash, MATLAB, HTML/CSS, OCaml, MIPS Assembly
Tools: Git, Linux/Unix, \LaTeX , Jupyter, QGIS/ArcGIS, AWS EC2, VS Code, RESTful APIs, MongoDB, Jira, Jenkins, Liquibase

PUBLICATIONS & PRESENTATIONS

- Redick, N. R., Tarling, M. S. & Kirkpatrick, J. D. *Code-Free Deep Learning for Geospatial Applications* in. AGU23 (AGU, Jan. 23, 2024). <https://agu.confex.com/agu/fm23/meetingapp.cgi/Paper/1366363> (2024).
- Redick, N. R. A Review of Pumice Raft Formation Environments, Saturation, and Dispersal Mechanisms. *McGill Science Undergraduate Research Journal* **18**, B19–B25. ISSN: 1718-0783. <https://msurjonline.mcgill.ca/article/view/187> (2024) (1 Mar. 20, 2023).
- Redick, N. R. *Building an Accessible Machine Learning Workflow for Geospatial Analysis* Open Research Symposium McGill Library, Montreal QC. Apr. 4, 2023. <https://escholarship.mcgill.ca/concern/presentations/2n49t738j?locale=en>.