

EDUCATION

2024–2026	MSc Geophysics (3.91/4.00)	University of California, Davis
	Thesis: <i>Understanding Seismic Anisotropy Observations in the Context of 3D Slab-Induced Flow in the Cascadia Subduction Zone</i> (Advisor: Magali Billen)	
2019–2023	BA Computer Science (3.75/4.00)	McGill University
	<ul style="list-style-type: none"> – Minor in Earth & Planetary Sciences, Supplementary Minor Conc. in Computer Science (Data Science, Machine Learning) – Research: <i>Accessible Machine Learning For Geospatial Analysis; Using a U-Net to Identify Landslides</i> (Advisor: Jamie Kirkpatrick) 	

WORK EXPERIENCE

Sept 2025–present	Graduate Student Researcher @ UC Davis Datalab	Davis, CA
	<ul style="list-style-type: none"> – Working on virtual & augmented reality development in C++ for scientific analysis & visualization. – Rebuilding organization documentation to improve accessibility & reach. 	
Jul 2023–Aug 2024	Technology Analyst @ Morgan Stanley	Montreal, QC
	<ul style="list-style-type: none"> – 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. 	
May–Aug 2022	Data Science Intern @ Esri Canada	Remote
	<ul style="list-style-type: none"> – 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%. 	

PAPERS & TALKS⁺

1. ⁺ **Redick, N. R.** *Intro to Machine Learning Tools & Applications for Geoscience*. Friday Lunch Talk. University of California, Davis. <https://github.com/nredick/intro-to-ml-GVP> (2025).
2. ⁺ **Redick, N. R.** *Origin of Earth & Early Earth*. GEL 1. Guest Lecture, University of California, Davis (2025).
3. ⁺ **Redick, N. R.**, Tarling, M. S. & Kirkpatrick, J. D. *Code-Free Deep Learning for Geospatial Applications*. AGU23. <https://agu.confex.com/agu/fm23/meetingapp.cgi/Paper/1366363> (2024).
4. **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> (2023).
5. ⁺ **Redick, N. R.** *Building an Accessible Machine Learning Workflow for Geospatial Analysis*. Open Research Symposium. McGill Library, Montreal QC. <https://escholarship.mcgill.ca/concern/presentations/2n49t738j> (2023).

SKILLS

Programming Languages	Python, Julia, C/C++, Java, DB2/SQL/MySQL, R, Bash, MATLAB, HTML/CSS, OCaml, (MIPS) Assembly
Software & Tools	Git, Linux/Unix, \LaTeX , Jupyter, HPC, Slurm, QGIS/ArcGIS, ASPECT, Paraview, RESTful APIs, MongoDB, Jira, Jenkins, Liquibase

SERVICE & LEADERSHIP

- Feb 2025 **Field Trip Activity Leader** @ UC Davis
- Facilitated an interactive learning activity in the rock garden for visiting 6th-grade students.
 - Engaged students in discussions & hands-on experiences about characteristics of the 3 major rock types.
- Jan 2025–Jun 2025 **Student Mentor** @ Association of Women Geoscientists at UC Davis
- Assist a student in learning new skills, building job applications & cvs; discussing the science field & graduate school.
- Oct 2024–present **Datalab Affiliate** @ UC Davis Datalab
- Participate & assist in data science & computational pedagogy workshops.
- Sept 2020–Apr 2023 **Vice President of Communications** @ Montereian Society
- Managed communications for the undergraduate student council of Earth & Planetary Sciences at McGill University.

TEACHING EXPERIENCE

- Apr–Jun 2025 **GEL 1: The Earth (TA)** UC Davis
- Guest lectured on the formation of the Earth & space.
 - Led 1 hr/week of discussion on introductory earth science concepts.
- Jan–Mar 2025 **GEL 101L: Structural Geology Lab (TA)** UC Davis
- Led 6 hours a week of lab on upper-division undergraduate structural geology concepts & field techniques/mapping.
- December 2024 **Intro to Computational Pedagogy Workshop** UC Davis Datalab
- Two-day instructor training on evidence-based teaching, inclusive pedagogy, & instructional design for computational skills.
- Sept–Dec 2024 **GEL 50L: Physical Geology Lab (TA)** UC Davis
- Led 6 hours a week of lab on intro geologic concepts & field techniques.

FIELD EXPERIENCE

- Sept 2025
3 days **Seismic Node Recovery/Redeploy** Mt. Rainier & Mt. St. Helens, WA
UC Davis, University of Oregon, & USGS Cascade Volcano Observatory
- Assisted in the recovery of seismic nodes deployed in Aug 2025 along the Tahoma Creek drainage.
 - Assisted in deployment of 87 seismic nodes during helicopter-enabled deployment on Mt. St. Helens.
- Aug 2025
20 days **PACSAFE 2025 & EXTEND 2025** Offshore, BC
NRCAN, University of British Columbia, University of Victoria, NFSI
- Participated as an Apply-to-Sail student aboard the CCGS John P. Tully to recover & deploy ocean bottom seismometers (OBS).
 - PACSAFE OBS were recovered along the Explorer microplate off of Haida Gwaii & redeployed to the south of the 2024 field.
 - EXTEND OBS were deployed along the Endeavour Ridge to complement existing cabled arrays.
- Jul 2025
2 days **Temporary Seismic Array Deployment** Mt. Rainier National Park, WA
UC Davis, University of Oregon, & USGS Cascade Volcano Observatory
- Assisted a deployment of 53 seismic nodes in temporary arrays along the Tahoma Creek drainage to support studies of debris flows.

May 2025 1 day	Field Assistant <i>UC Davis</i> – Assisted in the collection of biofilm samples from lava tubes.	Jot Dean Cave & Pluto Cave, CA
Oct 2022 7 days	Graduate Volcanology Seminar <i>McGill University</i> – Participated in a field seminar to study the volcanological features & geologic history of the caldera & associated features.	Long Valley Caldera, CA
May 2021 16 days	Field School I <i>McGill University</i> – Produced maps of geologic units & structures in both Rainbow Basin, CA & Dublin Gulch, CA. – Gained experience in structural field mapping, using a Brunton compass, & navigating with topographic maps.	Death Valley, CA

CERTIFICATIONS

<i>A-200 Mishap Review</i> , Interagency Aviation Training (USGS)	Aug 2025
<i>A-110 Aviation Transportation of HazMat</i> , Interagency Aviation Training (USGS)	Aug 2025
<i>A-100 Basic Aviation Safety</i> , Interagency Aviation Training (USGS)	Aug 2025
<i>Workplace Hazardous Materials Information System (WHMIS)</i> , Aix Safety (Canada)	Jun 2025
<i>Wilderness First Aid</i> , Sierra Rescue (Expires Nov 2027)	Nov 2024
<i>Epinephrine Auto-Injector Administration</i> , Sierra Rescue (Expires Nov 2026)	Nov 2024
<i>Adult Child Infant CPR/AED & First Aid</i> , Sierra Rescue (Expires Nov 2026)	Nov 2024

SCHOLARSHIPS & AWARDS

<i>Bogo Hack</i> , MAIS Hacks 2022	Oct 2022
<i>Best Design & Most Fun; Most Creative Game Dev Hack</i> , McHacks9	Jan 2022
<i>Best AI Hack for Art</i> , MAIS Hacks 2021	Oct 2021
<i>Geotop 2021 Scholarship Competition</i> , Geotop (\$1500)	Jun 2021
<i>Best Overall Hack</i> , MAIS Hacks 2020	Oct 2020
<i>Alma Mater Scholarship</i> , McGill University (\$3000)	Sept 2019