

Nathalie Redick

United States & Canada

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EDUCATION

McGill University (3.71 / 4.00)

Montréal, QC | Sep. 2019 – May 2023

- B.A. in **Computer Science**, Minor in **Earth & Planetary Sciences** & Supp. Minor Conc. in Comp. Sci.
- *Relevant Courses*: Algorithms & Data Structures, Data Science, Linear Algebra I & II, Discrete Math, Probability, Statistics, Applied Machine Learning, Probabilistic Programming.

SKILLS

Programming Languages: Python, C++, C, Java, R, Bash, Julia, MATLAB, HTML/CSS.

Tools: Git, Unix, ~~TeX~~TeX, Jupyter, AWS EC2, VS Code, QGIS, ArcGIS Pro.

EXPERIENCE

Data Science Intern @ [Esri](#)

Remote | May 2022 – Aug. 2022

- Implemented an automated workflow for updating national hydrography datasets using Esri's Multi-Task Road Extractor **deep learning** model.
- Improved the baseline model by $\sim 4\%$ accuracy to **96.3% accuracy & 0.85 MIOU** by designing new input image layers & geomorphological indicators.

Software Engineering Intern @ [Blue Spiral Interactive](#)

Saratoga Springs, NY | Jun. 2019 – Aug. 2019

- Strengthened in-house marketing analysis software by working with a team to build a **RESTful API** for accessing & visualising marketing data.
- **Self-taught** Python, Git, & QGIS over the course of the internship. I used parallel computing techniques to **reduce execution time by 97%**.

Software Development Intern @ [Garnet River](#)

Saratoga Springs, NY | Feb. 2019 – Jun. 2019

- Evaluated the efficacy & usability of computer vision products from Microsoft, Google, & AWS.

PROJECTS

Machine Learning For Geospatial Analysis | [McGill University](#)

Sep. 2022 – Present

- Creating a guided machine learning workflow for geospatial analysis.
- Our objective is to create a tool that can be used by anyone, regardless of their technical background.

Using U-Net to Identify Landslides | [McGill University](#)

May 2021 – Present

- Independently designed a research project to implement an image segmentation ML model to identify landslides using geological & physical indicators.
- Currently **collaborating with the California Geological Survey** to expand the project scope.
- Current iteration of the model boasts **95.3% accuracy & a loss of 0.19**.

AWARDS

- Won both **Best Design & Most Fun & Creative Game Dev Hack** against 332 participants at McHacks9 for [Pan\(demic\)-Man](#), COVID-19-themed Pac-Man webGL game built with *Unity Game Engine* & C#.
- Awarded **Best AI Hack for Art** against 111 participants at MAIS Hacks 2021 for [MAISpeare](#), a LSTM-driven web app (Python, HTML/CSS) that generates a poem from any image.
- Won **Best Overall Hack** at MAIS Hacks 2020 by leading a team against 115 participants to create a XGBoost-driven **web app** (Python, HTML/CSS) that predicts MBTI Personality Type based on Twitter data.

Geotop 2021 Scholarship Competition (\$1500)

Geotop | 2021

- Selected based on my research proposal to *Use ML to Identify Landslides* & my academic performance.

EXTRA-CURRICULARS

Vice President Communications | [The Monteregian Society](#) at McGill University

Sep. 2020 – Present

- Managed communications for the undergraduate student council for Earth & Planetary Sciences.
- Designed & built the council's website to host student resources, events, & other information.

PROFESSIONAL DEVELOPMENT

SCIWS12 Tutorial on Machine Learning & Deep Learning | [American Geoscience Union](#)

Dec. 2020

- Attended a technical workshop on machine learning & deep learning for the environmental & geosciences.

MAIS 202: Accelerated Introduction to ML | [McGill Artificial Intelligence Society](#)

Jan. 2020 – Apr. 2020

- Selected through a technical interview to participate in a 12-week accelerated course of ML.
- **Webscrapped data** to train a **CNN** to classify geologic sample images into 4 classes; deployed as a webapp.