Nathalie Redick

United States & Canada

+1 (518) 410 4084 | nathalieredick@gmail.com | nredick | nredick

Education

McGill University (3.71 / 4.00) *Montreal, QC* | Sep. 2019 – May 2023
- B.A. in **Computer Science**, Minor in **Earth & Planetary Sciences** & Supp. Minor Conc. in Comp. Sci.

Skills

Programming Languages: Python, C++, C, Java, R, Bash, Julia, MATLAB, HTML/CSS, OCaml, MIPS Assembly.
Tools: Git, Unix, LaTeX, 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 Development Consultant @ *Redbud Development* *Wilton, NY* | Jan. 2020 – Aug. 2021
- Designed & built a macOS desktop app in Python to process design & project budget data for clients.
- Implementing the app into the workflow **reduced proposal creation time by 95%.**

Software Engineering Intern @ *Blue Spiral Interactive* *Saratoga Springs, NY* | May 2019 – Aug. 2019
- Strengthened in-house marketing analysis software by working with a team to build a **RESTful API** for accessing & visualising marketing data.
- Individually developed a pipeline in Python to standardise 10GB of NYS voter registration data to map on QGIS; map was designed to advise a spatially-informed political campaign strategy.
- **Self-taught** Python, Git, & QGIS over the course of the internship. I also gained experience with parallel computing, **reducing pipeline execution time by 97%**.

Awards

- Won both **Best Design** & **Most Fun & Creative** hack leading a team of 3 to design a COVID-19 spoof of Pac-Man WebGL game using *Unity Game Engine*, competing against 332 participants at McHacks9.
- Awarded **Best AI Hack for Art** against 111 participants at MAIS Hacks 2021 for MAISpeare, a LSTM-driven (*Python, HTML/CSS*) web app 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 Indentify Landslides* & my academic performance.

Alma Mater Scholarship *($3000)* *McGill University* | 2019
- Entrance bursary to McGill University for academic excellence in high school.

Stat Staff Professionals Computer Science Scholarship *($1000)* *Saratoga Springs High School* | 2019
- Selected amongst ~ 40 students for academic excellence & demonstrated potential in computer science.

Projects

U-Net Tool For Geospatial Analysis | *Research @ McGill University* Sep. 2022 – Present
- Creating a plug & chug **U-Net image segmentation** tool that can be used analyze geospatial problems.
- Our objective is to create a tool that can be used by anyone, regardless of their technical background.

Using Machine Learning to Identify Landslides | *Research @ 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 implement new methods into the landslide identification workflow & to improve the performance of the model.
- Current interation of the model boasts **95.3% accuracy & a loss of 0.19.**

Extra-curriculars

Member | *McGill Artificial Intelligence Society* Sep. 2022 – Present
- Participated in monthly discussions on AI, attended workshops, & participated in other events.

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.