# ALAN J. YU

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## Summary


I am a final-year undergraduate specializing in Geophysics at the University of Toronto. I am experienced in geospatial mapping (ArcGIS, Oasis Montaj), numerical modelling (ASPECT), data visualization (Matplotlib, SEG-Y) and processing (Leapfrog, Python).


## Education

**Honours Bachelor of Science** Expected 2023

*Specialist in Environmental Physics with Co-op, University of Toronto*

Notable Courses: fluid mechanics, planetary geophysics, planetary astrophysics, mineralogy, petrology, sedimentology, structural geology, and seismology.

## Experience

**Researcher – Numerical Modelling** Toronto, ON

*University of Toronto, supervised by Prof. Phil Heron* Summer 2022–

- Investigated the potential tectonic mechanisms involved in North Atlantic rifts via numerical modelling with geodynamics code ASPECT.
- Proposed conditions and physical constraints that allow rifting and terrane formation.
- Computations were performed in the Niagara supercomputer, and model results were visualized using *ParaView*.
- Published, co-author: *Stranding continental crustal fragments during continental break-up: mantle suture reactivation in the Nain province of Eastern Canada*, Geology (DOI).
- In prep, first author: *The formation of a continental fragment due to structural inheritance: geodynamic model for the Lewisian Terrane, NW Scotland*

**Geophysicist** Toronto, ON

*Abitibi Geophysics, supervised by Nadine Veillette* Spring 2022

- Mapped and processed preliminary geophysical surveying data (e.g., magnetic, induced polarization, and gravity) in Geosoft Montaj.
- Developed templates and control scripts to streamline and standardize the process of map production.

**Researcher – Seismic Stratigraphy** Toronto, ON

*University of Toronto, supervised by Prof. Nick Eyles* Fall 2021

- Investigated potential records of past intraplate earthquakes in western Quebec using seismic reflection profiles that capture deformation structures below the basin of Lake Simard, Quebec.
- Analyzed cross-section seismic stratigraphic profiles and constructed 3-D visualization from the seismic profiles to determine the extent and chronology of the deformation structures.

- Submitted, first author: *Seismostratigraphy of Lake Simard basin, Quebec Canada: sedimentation in glacial Lake Barlow Ojibway*, Canadian Journal of Earth Sciences.

**Research Assistant – GIS & Glacial Geology** Toronto, ON
*University of Toronto, supervised by Prof. Nick Eyles* Summer 2021

- Trained automated processing and identification of glacial features (e.g., drumlins, mega-scale glacial lineations, moraines) in high-resolution Li-DAR data and satellite imaging.
- Investigated ancient glacier flow based on the glacial features, and assisted with reconstructing past glacier movements in Seattle, Wisconsin and southern Ontario.
- Contributed to numerous field projects including capturing and measuring mega grooves; ecological survey for invasive species using remote sensing; assisting with setting up seismic reflection/refraction equipment, and; capturing media content around the Georgian Bay for e-learning Ontario.

## Awards

**NSERC Undergraduate Student Research Award – $7500** 2021
*Natural Sciences and Engineering Research Council, Government of Canada*

**CRESS Summer Research Award – $7500** 2021 & 2022
*Centre for Research in Earth System Science, University of Toronto*

**Don Salt Memorial Scholarship – $800** 2022
*University of Toronto & Canadian Exploration Geophysics Society*

## Miscellaneous

**Class 5 (Full) Driver's License** 2017–
*Saskatchewan Driver's Licensing and Vehicle Registration*

**Pleasure Craft Operator Card** 2021–
*Transport Canada*

**Basic Operator of Remotely Piloted Aircraft Systems** 2021–
*Transport Canada*