Liam Carson

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Remote Sensing | Geophysics | UAV | Data Processing

QUALIFICATION SUMMARY

Detail-oriented individual with extensive experience in remote sensing, geomorphology, geophysics, and hydrology. Skilled in data collection, modeling, and visual representation of results. Focused on Arctic and high alpine hydrological and terrestrial environments.

KEY SKILLS

- ✓ UAV operation
- ✓ GIS data analysis
- ✓ LiDAR data processing

- ✓ Geospatial data collection
- ✓ GNSS surveys
- ✓ Field observation

- ✓ GPR/Geophysics
- ✓ Geomorphology
- ✓ Hydrology

RELEVANT PROFESSIONAL EXPERIENCE

University of Calgary   *Calgary, AB*
Teaching Assistant   January 2024 - Ongoing
- Geography 310: Landforms and soils/Geography 410: Process Geomorphology
  - Instructed multiple undergraduate lab sessions a week discussing geomorphological features and characteristics and the processes and physics behind them.

University of Calgary   *Prince Albert, SK*
Drone Pilot   September - September 2024
- Hired by the department of Geography at the University of Calgary to use drones to map an archeological study site in Saskatchewan.
- Used GNSS survey techniques to collect high precision locational data for the study and georeferenced the drone data.

Caslys Consulting Ltd.   Saanich, BC
GIS Technician   December 2022 – February 2023
- Environmental consulting firm that uses spatial analysis and remote sensing skills to find innovative solutions to environmental challenges
- Contract remote sensing technician responsible for image correction and analysis.
- Observation and classification of satellite imagery for seismic survey lines in Northern BC for the BC Oil and Gas Commission.
- Ability to display my GIS and remote sensing skills in a professional environment.

Top Notch Yachts   Sidney, BC
Lead Detailer   May 2021 – August 2023
- Most renowned yacht detailing company on Vancouver Island responsible for polishing, washing, and waxing yachts.
- Leading the crew, I supervised detailing operations, trained new crew members, and ensured customer satisfaction.

RESEARCH EXPERIENCE

Master Thesis Research – *University of Calgary*   Svalbard
                                                                              June 2024 – May 2025

- Conducted research at multiple Arctic glacial forefields in Svalbard to observe the rate at which thaw slumping is occurring as a result of thawing permafrost and melting buried glacial ice.
- Used UAVs and RTK receivers to survey these areas to determine the loss in volume and area resulting from the thaw slumps.
- Using Structure from Motion (SfM) techniques, the images were processed to create digital elevation models (DEMs)
- Ground Penetrating Radar (GPR) was used to determine the extent of buried glacial ice to assess the probability of future ground instability.

Elbow River Study – *University of Calgary*   Calgary, AB
                                                                         February 2024 – April 2024

- The Elbow River was assessed before and after a section of road was constructed that spanned the river.
- Using LiDAR data from before and after the construction, and up-to-date drone imagery, an analysis on the erosion of the cut bank was done to determine if the construction altered the hydrological dynamics of the river and caused harm to the surrounding ecosystem.

Bridge Glacier Hydrology Study – *University of Victoria*   Lillooet Icefield, BC
                                                                          August – September 2022

- Conducted research on Bridge Glacier studying the hydrology and geomorphology of the glacier and the surrounding area. Analyzed hydrological flow patterns and collected conductivity measurements from the river, lake, and glacier.
- The scope of my research consisted of two main variables: time (diurnal cycles of melt) versus weather, which influenced the conductivity and temperature readings and in turn, provided models that displayed the relationships.

Cowichan Lake Cut Block Study – *University of Victoria*   Cowichan Lake, BC
                                                                                      May 2022

- Used drones to map clear-cut and forested areas using specialized software.
- The purpose was to compare the accuracy and reliability of SfM mapping in clear-cut versus forested regions using LIDAR imagery as a reference.

EDUCATION

University of Calgary   Calgary, AB
Master of Science   Ongoing

- *University Center in Svalbard (UNIS)*   Longyearbyen, Svalbard
  - Accepted into a competitive course offered by UNIS to study glaciology with students from around the world
- Received the Alberta Graduate Excellence Scholarship (AGES)   Calgary, AB
- Elected Vice President of Geography Graduate Students Association (GeoGSA)   Calgary, AB

University of Victoria   Victoria, BC
Bachelor of Science in Geography   December 2022

- Relevant classes include Dynamics of the Cryosphere, Physical Geography Field Study, GIS Analysis, Mapping with Drones Field Study, Process Geomorphology, Cartography, Remote Sensing with Active Sensors, Hydrology and Climatology, Environmental Assessment.