

# Ben Woodward

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## At a Glance

- **Geographer:** Lifelong interest in and comprehensive understanding of geography, as demonstrated by exceptional results in the Canadian Geographic Challenge, International Geography Olympiad, and other academic competitions
- **Geovangelist:** Genuine passion for geography and environmental education, as demonstrated by five years of offering free talks on geography and allied disciplines through my high school's geography club, the Canadian Geography Workshop Series, and public speaking engagements for local service clubs
- **Innovator:** Ability and willingness to become highly proficient in GIS technologies, web development, and other related skills to make geography-related educational resources more widely available and accessible, create innovative digital humanities projects, and to introduce high school students to these technologies to give them a more complete perspective on where geography can take them

## Education

Candidate for Bachelor of Environmental Studies, Honours Geography and Environmental Management, with Joint Major in Earth Sciences and Specialization in Geomatics, University of Waterloo, Waterloo, Ontario (Autumn 2019 to present)

- **Achievements and Awards**
  - Awarded the Dean's Scholarship of Excellence for demonstrating a passion for environmental issues
  - Achieved a 90%+ average in all full academic terms thus far, including a 94% average across all geography courses
- **Sample Courses**
  - GEOG 371 – Advanced Remote Sensing
  - GEOG 381 – Advanced Geographic Information Systems
  - GEOG 387 – Spatial Databases
  - EARTH 342 – Geomorphology and GIS Applications

## Work Experience

- **Geomatics Technician at the Canadian Soil Information Service** (January 2022 to present)
  - Use R, R-Shiny, and Linux to create and deploy data analysis and visualization web apps for internal use
  - Extract and process remotely sensed data (e.g., satellite imagery and derivatives) using Google Earth Engine, R, QGIS, and other technologies
  - Assist with soil-related analysis and modelling to create data products for farmers and assess the carbon storage potential of various soils
- **GIS and Digital Archives Assistant at the Bayfield Historical Society and Archives** (June 2021 to September 2021)
  - Used my knowledge of the React and Django frameworks, databases, and Linux to develop and deploy the Bayfield Historical Web Map (<https://www.bayfieldhistoricalwebmap.ca/>), allowing the public to explore the Bayfield Historical Society's photograph and map collection in an interface that is more user-friendly than PastPerfect
  - Worked closely with the historical society's volunteer archivist to digitize and encapsulate most of the Bayfield Historical Society's paper map collection
  - Answered visitors' and researchers' questions and requests for images, both in person and over email
- **GIS Technician at the Region of Peel** (January 2021 to April 2021)
  - Used my knowledge of Python/ArcPy to develop an object-oriented error-checking system run through model builder that flags common errors in spatial datasets. Errors checked include formatting of phone numbers and postal codes, checking that points are in the proper region, and other general and dataset-specific checks
  - Worked closely with a team of GIS technicians and analysts to update spatial datasets and complete requests for maps or datasets in a timely manner (typically within 1 to 2 business days)

## Volunteer Experience

- **Canadian Geography Workshop Series** (2020 to present)
  - Worked closely with my teammates from the International Geography Olympiad to develop and [present twelve free Zoom workshops](#) to help high school students learn more about the world, prepare for geography competitions, and learn about the multitude of ways they can pursue geography beyond high school
  - Created and deployed [geoworkshops.ca](#), a website used to make our workshops, activities, quizzes, and external geography resources more accessible to all Canadian students
  - Worked with Canadian Geographic Education to advertise our workshops to various school boards, geography teachers, and students from across Canada
  - Reached out to various academics to review workshop content and to get them involved in the workshops as guest lecturers
- **UW Geospatial Club** (Executive Autumn 2019 to Present, President Winter 2020 to present)
  - Lead term-long, team-based GIS projects to help members gain practical GIS skills through hands-on experience
  - Develop GIS tutorials and workshops for newer GIS users as needed
  - Exercise professionalism, exude enthusiasm, and promote inclusivity in general and executive meetings
- **Skills Ontario** (2022 - upcoming)
  - Lead two March Break QGIS workshops for high school students who are new to GIS
- **Waterloo Association of Geography Students** (Academic Representative Autumn 2020, Autumn 2021)
  - Attend my program's department meetings to offer instructors my perspectives as an undergraduate student

## Selected Awards

- **White Pine Award - Forests Ontario** (February 2022)
  - Awarded to a student who contributes to forestry education and awareness
- **Peoples' Choice Award - Western GIS Days Conference** (November 2021)
  - Received a peoples' choice award for the Bayfield Historical Web Map, as voted by conference attendees
- **Peoples' Choice Award - National Geomatics Competition** (February 2020)
  - Worked with a team to develop and pitch a GIS workflow to provide insight into the optimal route for an LRT system in Guelph, which earned a place in the finals and the peoples' choice award
- **Gold Medal (3<sup>rd</sup> place) - International Geography Olympiad** (August 2019)
  - Qualified for a four-member team Canada in both 2018 and 2019 by designing and executing my own field studies
  - Excelled at challenging examinations that tested the geographic thinking, fieldwork, and graphicacy skills of 168 top geography students from 43 countries, allowing me to place third worldwide in the Olympiad in 2019
- **3<sup>rd</sup> place - Ontario Envirothon Provincials** (May 2019)
  - Worked with a team to excel in written examinations, fieldwork tasks, and case studies pertaining to wildlife, soils, aquatics, forestry, and sustainable agriculture, placing third in Ontario in 2019
  - Participated in the Ontario Envirothon in all four years of high school
- **National Champion - Canadian Geographic Challenge Level 2** (June 2017)
  - Demonstrated superior geographic knowledge and fieldwork skills by winning Canada's top geography bee in 2017

## Technical Skills

- Desktop GIS (QGIS, ArcMap, ArcGIS Pro)
- Python scripting for GIS applications (ArcPy, pyQGIS)
- ArcGIS Online
- Frontend Web Development (HTML, CSS, Bootstrap, Javascript, JQuery, React, Redux)
- Backend Web Development (Django, PostgreSQL, Linux Ubuntu, Apache, R Shiny)
- Web mapping in Javascript (OpenLayers, Leaflet)
- Data analysis in R, including spatial data analysis
- Remote Sensing and LiDAR (Google Earth Engine, PCI Geomatica, Snap, LAStools)
- Relational Database Design