Andrew Ding

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Education:

University of Waterloo - September 2019 - May 2024

- **Honours Geomatics Co-op + Joint Honours Mathmatics**
  - 96.4% Cumulative Average
  - Received $25,000+ in Scholarships and Awards
- **Relevant Course Work**
  - ST2137 - Statistical Computing and Programming
    - Completed on Exchange at NUS (5.0 GPA)
  - STAT 231 - Statistics (100%)
  - STAT 220 - Probability (96%)
  - GEOG 318 - Spatial Analysis (99%)

Skills:

- **Programming Languages:**
  - Python (pandas, geopandas, matplotlib, seaborn, numpy, scipy, statsmodels, statistics)
  - R (tidyverse, sf, raster, ggplot2, ggmap)
  - JavaScript, HTML/CSS, SQL, SAS, C
- **Geospatial Tools:**
  - ArcGIS Suite (ArcGIS Pro, ArcMap, ArcGIS Online, ArcPy)
  - QGIS, Mapbox GL JS, Turf.js, PostgreSQL/PostGIS
- **Visualization Tools:**
  - Tableau, PowerBI, Illustrator, Photoshop, Figma

Experience:

Data Analyst - Capital One | May 2023 - Aug. 2023

- Devised a methodology to adapt a Markov chain model for my department's operational context, overhauling the process of training and validating transition matrices. These matrices forecast customer charge-off rates by predicting future delinquency progression over several statements, empowering proactive risk management and reducing losses.

Spatial Data Analyst - BA Consulting Group Ltd. | Jan. 2023 - Apr. 2023

- Designed and developed interactive web applications using Mapbox GL JS and Turf.js, empowering both clients and colleagues to make data-driven decisions through easy-to-use spatial analysis tools.
- Streamlined transit reach modeling and analysis efforts by developing an automation script that converts GTFS files into a Network Dataset, resulting in more efficient and accurate transit network analysis.

Research Intern - École polytechnique fédérale de Lausanne (EPFL) | May 2022 - July 2022

- Conducted in-depth exploratory spatial analysis using R and various packages such as sf, raster, and ggplot, utilizing a combination of raster and microdata to analyze demographic trends over different temporal periods.
- Developed a methodology to categorize and assign sets of census polygons to functional urban areas in developing countries, resulting in a more accurate representation of demographic data, to be used in a future research publication.

Engineering and Planning Student Coordinator - Region of Waterloo | Sept. 2021 - Dec. 2021

- Developed efficient workflows and methods using ArcGIS Pro to automate the identification and removal of extraneous line segments, reducing the runtime of water distribution model simulations and improving overall performance.
- Conducted data analysis using Python to compare and validate the accuracy of predicted discharge flow against calculated discharge flow, as well as identify deviations in discharge flow during water break events.

Geospatial Technician - Environment and Climate Change Canada | Jan. 2021 - Apr. 2021

- Created multiple geoprocessing tools using ArcGIS ModelBuilder to streamline the analysis of vector features, and incorporated the results into an interactive dashboard using PowerBI for easy visualization and interpretation.
- Utilized NDVI and EVI rasters, accessed through NASA Earthdata, to assess vegetation levels in the wintering ranges of migratory birds. This research was published, providing valuable insights on the habitats of these species.

GIS Heritage Assistant - City of Peterborough | May 2020 - Aug. 2020

- Refined and deployed an interactive walking tour web app using ArcGIS Webapp Builder and ArcGIS Online, providing users with a dynamic and engaging way to explore a given historical interest.

Involvement:

Fellow - Royal Canadian Geographical Society (FRCGS) | Nov. 2022 - Present

- Nominated and selected as one of the youngest fellows in the history of The Royal Canadian Geographical Society's College of Fellows, an esteemed honor recognizing exceptional contributions to the field of geography.

Presenter and Co-Founder – Canadian Geography Workshop Series | Sept. 2020 - Present

- Designed and led interactive virtual workshops for students preparing for the International Geography Olympiad, covering topics such as GIS analysis, demography, and urban geography.

Gold and Silver Medallist - International Geography Olympiad (iGeo) | Aug. 2019

- Finished within the top 4 in National Qualification Stage to represent Canada at the competition.
- Led the national team in the design and presentation of the gold-medal winning poster at the poster competition.
- Completed fieldwork task, written exam and multimedia test within a strict timeframe to win an individual silver medal, finishing 37th worldwide.

Other Involvement: Coronavirus Visualization Team, Tableau Student Viz Contest, National Geomatics Competition