Peter Whitman

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Summary

Experienced data science researcher with expertise in remote sensing and geographic information science (GIS). Led high-performance computing projects at the U.S. Environmental Protection Agency focused on satellite-based water quality monitoring, which resulted in numerous peer-reviewed articles that influenced federal and state policy decisions. Received a M.Sc. in Geography from the University of British Columbia and a B.A. in GIS and Environmental Science from Carthage College. Skilled in Python, R, JavaScript, and ESRI ArcGIS, with a strong background working in hybrid teams on data science projects.

Experience

Freelance Consulting   **St. Paul, MN**
Data Science and GIS Consultant   11/2023 – Present

- Used Python and Adobe Creative Cloud to create detailed waterway navigation map from satellite data for the 30,000 Islands Archipelago.

Sabbatical   **St. Paul, MN**
Personal Development   10/2022 – 10/2023

- Collaborated with colleagues from the U.S. Environmental Protection Agency to publish three peer-reviewed articles.
- Focused on physical & mental wellness.
- Hiked the Superior Hiking Trail (300+ miles).

U.S. Environmental Protection Agency   **Raleigh, NC**
Oak Ridge Institute of Science and Education Research Fellow   09/2019 – 09/2022

- Completed competitive fellowship program and produced five peer-reviewed publications and multiple technical reports.
- Led projects in collaboration with NASA to evaluate water quality applications of multispectral, hyperspectral, and synthetic aperture radar (SAR) satellites.
- Developed software in Python, JavaScript, and R to analyze terabytes of satellite and geospatial data using high-performance computing resources.

University of British Columbia   **Vancouver, BC**
Graduate Research Assistant   05/2018 – 08/2019

- Developed innovative image processing techniques in MATLAB and developed machine learning algorithms for image classification in Python to automate analysis of historical airborne image data.
- Conducted advanced spatial and aspatial analysis of population mortality in R.
- Mined, cleansed, and analyzed geospatial data to identify variables that influence cardiac arrest outcomes.

Graduate Teaching Assistant   09/2017 – 05/2019

- Taught 300+ students geographic information science and remote sensing.
- Provided comprehensive learning opportunities through live Python and ESRI ArcGIS demonstrations, labs, lectures, and individualized assistance.

Carthage College   **Kenosha, WI**
Undergraduate Teaching Assistant   09/2016 – 05/2017

- Taught 100+ students geographic information science.
- Engaged with students through live ESRI ArcGIS demonstrations and individualized assistance.

Student Manager   09/2016 – 05/2017

- Led a team of 15 students and provided mentorship to improve performance.
- Analyzed geospatial data with ESRI ArcGIS and created reports to increase alumni donations through optimized engagement strategies.

City of Edina   **Edina, MN**
Geographic Information Systems Intern   06/2016 – 08/2016
- Used Python to automate individualized updates to flood zone maps for hundreds of homeowners.
- Managed and analyzed terabytes of geospatial data to support public works projects.

Minnesota Department of Natural Resources   **St. Paul, MN**
Invasive Species Program Intern   06/2015 – 09/2015
- Developed image classification algorithms with Python to identify invasive species within aerial imagery of Minnesota.
- Conducted multi-day field campaigns to validate image classification algorithms.
- Created habitat suitability models to further refine results of image classification algorithms.

City of St. Paul   **St. Paul, MN**
Urban Forestry Intern   06/2014 – 08/2014
- Managed 3,000+ trees and identified suitable sites to plant new trees using ESRI ArcGIS products.

Education

University of British Columbia   **Vancouver, BC**
Master of Science, Geography   09/2017 – 08/2019
- Geography Department Outstanding Teaching Assistant Award

Carthage College   **Kenosha, WI**
Bachelor of Arts, Geographic Information Science and Environmental Science   09/2013 – 05/2017
- Geospatial Science Department Distinguished Senior Award
- Environmental Science Department Distinguished Senior Award
- Conducted field research on endangered species in Chilean Patagonia and took coursework with Round River Conservation Studies.

Skills

Languages: Python (GDAL, TensorFlow, OpenCV, NumPy, ArcPy, Matplotlib, netCDF4, Pandas, GeoPandas), R (ggplot2, raster, ncdf4, stats, caret, sp, sf, rgdal, spatstat, maxent, boot, glcm), MATLAB, JavaScript, SQL

Technology Stack: Unix shell, Visual Studio Code, RStudio, MATLAB IDE, Google Earth Engine, GitHub, ESRI ArcGIS Products, ENVI/IDL, Agisoft Metashape, Adobe Photoshop, Adobe Illustrator, Google Workspace, Microsoft Office Suite

Methods: data science, statistics (Bayesian and frequentist), machine learning (random forest, support vector machine, neural networks), spatiotemporal statistics, geospatial analysis, object-based image analysis, image processing, image classification, geometric correction, atmospheric correction, data visualization, cartography, high performance computing, parallel processing

Communication: Peer-reviewed publications, technical writing, public speaking, technical demonstrations, stakeholder engagement, mentorship, teaching, teamwork and collaboration, AGILE development