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 peerreviewed 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