

ANDREW W. ROSS, MSc.

Senior Geographic Information Systems Analyst

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SUMMARY

Dedicated Senior Geographic Information Systems Analyst with a proven track record of over 9 years in GIS administration, data analysis, and project leadership. Excels in providing technical guidance, leading GIS teams, and leveraging advanced geospatial data science for qualitative and quantitative analysis. Proficient in Python scripting, ArcGIS Pro analytics, and spatial statistics. Adept at managing complex GIS projects and delivering data-driven solutions.

SKILLS

GIS Applications:	Expert in ESRI ArcGIS Pro & QGIS Systems administration: Oracle Spatial, Postgres/PostGIS, Geoserver Advanced skills in large spatial relational database design Installation, testing, and operation of GIS applications
Spatial data:	Comprehensive experience in data collection, cleaning, consolidation & coordination Expertise in maintenance & complex analysis of digital spatial data to support decision-making Proven track record in data conversion from a variety of sources and formats into GIS usable data
Python:	Geoprocessing with ArcPy, GeoPandas, Rasterio, Shapely, Fiona. Development of Spatial ETL pipelines Proficient in Jupyter notebooks
Cloud architecture:	Azure Fundamentals Certification AWS Certified Cloud Practitioner Certification

EXPERIENCE

Congruex
GIS Engineer

San Diego, CA
June 2020 - Current

- Engineered spatial data analysis in Python with Jupyter, GeoPandas, ArcPy, and scikit-learn increasing access to corporate data warehouse for project managers throughout company
- Trained GIS staff to support management of corporate mapping platform ensuring reliability and stability of spatial database, map servers and concomitant systems
- Dramatically improved speed and efficiency of GIS support staff tasks by instituting standardized workflows, and deploying tools and automations for spatial data management, quality control, and system maintenance
- Pioneered and deployed containerized API Docker infrastructure to expand functionality of maps for individual projects and departments, consisting of 19 endpoints written in Python FastAPI, providing geospatial analysis, reporting, and data management
- Launched reporting infrastructure to provide geospatial reports and analyses on scheduled basis to support project management and administrative needs in Docker and python
- Instituted continuous monitoring systems to check map server configuration and resource utilization resulting in improved performance and user experience
- Reduced time to develop tools and services by developing Python library to automate the configuration and management of mapping platform comprising over 7000 lines of code
- Created Python-based ETL workflow to consolidate geospatial data from partner organizations processing over 6.5 million features per day

Freelance
Data Analyst

San Diego, CA
January 2019 - May 2020

- Developed and deployed targeted surveys providing insights into customer engagement and product utilization
- Improved results by working closely with clients to deeply understand their needs, requirements and business
- Increased scale and analysis turnaround by automating end-to-end process to wrangle and analyze data in Python
- Improved depth of analysis by incorporating related spatial data and creating reporting pipeline in ArcGIS

BC Transit
GIS Analyst

Victoria, Canada
January 2013 - October 2018

- Deployed reporting and analysis system, built with Python and Jupyter notebooks, processing 150,000+ transactions per day from a fleet of 700+ vehicles providing detailed insights into transport ridership patterns
- Developed performance metrics system to monitor security and quality of regional reporting systems improving alerting and notification of farebox security incidents and technical problems
- Created continuous monitoring system with multiple departments ensuring uninterrupted stream of ridership data
- Performed statistical and spatial analysis on ridership data for administrative and planning departments, preparing reports and summaries in ArcGIS, directly supporting decision making for the management and planning of the transit network
- Managed updates and integration of spatial data into the corporate spatial data warehouse with Python and ArcGIS
- Received the 2015 corporate Recognizing Excellence and Values award for helping to create a cross-departmental team that significantly improved transit vehicle farebox data collection

EDUCATION

Queen's University
Master of Science, Computer Science

Kingston, Canada

University of Ottawa
Graduate Diploma, International Development

Ottawa, Canada

Queen's University
Bachelor of Science, Psychology & Computer Science

Kingston, Canada