

ANDREW W. ROSS, MSc.

Senior GIS Associate

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SUMMARY

Highly motivated Senior GIS Associate with over 9 years of experience developing and maintaining GIS maps, analyses, and geospatial data pipelines. Proven experience utilizing ArcGIS and Python for data validation, processing, acceptance, ingestion, integration, and quality assurance. Passionate about continuously researching and learning new technical processes and systems, and using spatial data analysis to solve real-world problems and improve decision-making.

SKILLS

GIS applications:	Expert in FME Form, ESRI ArcGIS Pro, and QGIS Advanced skills in large spatial db design: Oracle Spatial, Postgres/PostGIS Proficient in <u>Spatial modelling</u> to derive relationships & patterns on the ground
Programming & scripting:	Geoprocessing with Python spatial libraries including ArcPy, GeoPandas, Shapely Development of <u>Spatial ETL pipelines</u> Proficient with Python Jupyter Notebooks Test-Driven Python development with Pytest Spatial API development with FastAPI <u>SQL</u> : complex queries, stored procedures, functions
Cloud platforms:	AWS Certified Cloud Practitioner Certification Azure Fundamentals Certification Docker containerization setup and management Terraform IaC
Technical proficiencies:	Excellent proficiency with Microsoft Office GIT version control - code management, collaboration Linux and shell scripting

EXPERIENCE

Congruex
GIS Engineer

San Diego, CA
June 2020 - Current

- Architected and managed containerized cloud API infrastructure using Python FastAPI on Azure to expand functionality of maps for individual projects & departments, consisting of 19 geospatial analysis, reporting, and data management endpoints
- Engineered data analyses in Python with Jupyter Notebooks, GeoPandas, Shapely and other spatial libraries increasing access to corporate spatial data warehouse for project managers
- Trained GIS staff to support management of corporate mapping platform ensuring reliability and stability of spatial database, map servers, GIT, Linux and concomitant systems
- Dramatically improved speed and efficiency of support staff tasks by instituting standardized workflows and deploying tools and automations for data verification and management utilizing Jupyter Notebooks in Python for Geoserver and Postgres
- Established reporting infrastructure to provide geospatial reports and analyses on scheduled basis to support project management and administrative business processes, deployed on Azure with Docker and Python
- Created automated data cleaning and verification spatial ETL pipeline to consolidate geospatial data from partner organizations processing over 13 million features per day using containerized infrastructure on Azure

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 closely collaborating with clients to thoroughly understand their needs and requirements
- Increased scale and analysis turnaround by automating end-to-end process to verify, clean, consolidate and analyze data in Python and ArcPy
- Improved depth of analysis by incorporating related spatial data and creating reporting pipeline in ArcGIS Pro

BC Transit
GIS Analyst

Victoria, Canada
January 2013 - October 2018

- Worked closely with planning and administrative staff to develop GIS maps and suitability analyses consolidating relevant up-to-date spatial information to directly support planning and business objectives
- Deployed spatial ETL pipeline, 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 providing up to date statistical reports and analysis
- 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, ArcGIS, and ArcPy
- 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