

ANDREW W. ROSS, MSc.

GIS Mapping Specialist

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SUMMARY

Highly motivated GIS Mapping Specialist 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 application proficiency:	Expert in FME Desktop, ESRI ArcGIS Pro, and QGIS Advanced skills in large spatial relational database design: Oracle Spatial, Postgres/PostGIS
Spatial data analysis:	Comprehensive experience in data collection, cleaning, consolidation and coordination Data Architecture, data modeling, warehousing and analytics
Python programming:	Geoprocessing with spatial libraries including ArcPy, GeoPandas, Shapely Development of Spatial ETL pipelines Proficient in Jupyter Notebooks Test-Driven Development with Pytest Spatial API development with FastAPI
Cloud platforms:	AWS Certified Cloud Practitioner Certification Azure Fundamentals Certification Docker containerization setup and management Terraform IaC
Technical proficiencies:	PostgreSQL - Spatial analysis, geostatistics, triggers, functions GIT version control - code management, collaboration Linux and shell scripting

EXPERIENCE

Congruex GIS Engineer	San Diego, CA June 2020 - Current
<ul style="list-style-type: none">Engineered data analyses in Python with Jupyter Notebooks, GeoPandas, Shapely and other spatial libraries increasing access to corporate spatial data warehouse for project managersTrained GIS staff to support management of corporate mapping platform ensuring reliability and stability of spatial database, map servers, GIT, Linux and concomitant systemsDramatically 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 PostgresEstablished 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 PythonCreated automated data cleaning and verification 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 analyses ensuring their access to relevant up-to-date data to directly support 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
- 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