

ANDREW W. ROSS, MSc.

GIS Data Engineer

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SUMMARY

Highly motivated Geospatial Data Engineer with 5+ years of experience in designing, developing, and deploying data pipelines and APIs for spatial data analysis. Proven ability to leverage Python, SQL/PostGIS, cloud platforms, and containerization to transform raw geospatial data into actionable insights. Experienced in collaborating with cross-functional teams to deliver solutions that meet user needs and enhance spatial data accessibility.

SKILLS

Python:	Data processing with Pandas, Numpy, Scikit-learn Development of ETL pipelines Proficient in Jupyter notebooks Test-Driven Development with Pytest API development with FastAPI
SQL:	PostgreSQL/PostGIS - spatial queries, stored procedures, functions
Cloud architecture:	AWS Certified Cloud Practitioner Certification Azure Fundamentals Certification Docker containerization setup and management Terraform IaC
Technical proficiencies:	GIT version control - code management, collaboration Apache Airflow workflow Orchestration: DAG creation & deployment Linux & bash

EXPERIENCE

Congruex

Spatial Data Engineer

San Diego, CA
June 2020 - Current

- 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 on Azure, providing geospatial analysis, reporting, and data management
- Engineered data analysis in Python with Jupyter, GeoPandas, and scikit-learn increasing access to corporate spatial data warehouse for telecommunications project managers
- Provided end-user support and training to technical and non-GIS users of corporate web-mapping platform
- 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
- 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
- Reduced time to create tools and services by developing Python library to automate the configuration and management of mapping platform comprising over 7000 lines of code
- Created automated data cleaning and verification pipeline to consolidate geospatial data from partner organizations processing over 6.5 million features per day with containerized infrastructure on Azure

Freelance
Data Analyst Consultant

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 and requirements
- Increased scale and analysis turnaround by automating end-to-end process to verify, clean, consolidate and analyze data in Python
- Improved depth of analysis by incorporating concomitant datasets and creating reporting pipeline in Python

BC Transit
Data 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 continuous updates and integration of data into the corporate spatial data warehouse with Python
- 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
- Developed performance metrics system in Python to monitor security and quality of regional reporting systems

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