ANDREW W. ROSS, MSc.

Geospatial Software Engineer

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SUMMARY

Highly motivated Geospatial Software Engineer with over 9 years of experience designing, developing, and maintaining data pipelines and integrations to drive the generation of data driven operational insights. Experienced in cloud platforms (AWS, Azure) and containerization (Docker) for scalable data workflows. Demonstrated professional experience building data pipelines and developing REST APIs. Proven ability to collaborate effectively with cross-functional teams across organizations leveraging open source and cloud-based solutions to build large-scale data processing systems and API's.

SKILLS

Software development:	Python: Data processing with Pandas, Numpy, Scikit-learn Development of ETL pipelines Proficient in Jupyter Notebooks Test-Driven Development with Pytest REST API development with FastAPI SQL: PostgreSQL/PostGIS - complex queries, stored procedures, functions GIT version control - code management, collaboration
Cloud computing:	AWS Certified Cloud Practitioner Certification Azure Fundamentals Certification Docker containerization setup and management Terraform IaC
Technical proficiencies:	Geoserver administration, authorization, layer configuration, and styling Apache Airflow workflow Orchestration: DAG creation and deployment Linux CLI and shell scripting

EXPERIENCE

Congruex — San Diego, CA
Spatial Data Engineer — 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 San Diego, CA
Data Analyst 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
- Deployed interactive dashboards and visualizations to facilitate access to data and develop insights

BC Transit Victoria, Canada
Geospatial Data Analyst January 2013 - October 2018

- Performed statistical and spatial analysis on ridership data for administrative and planning departments, preparing reports and summaries directly supporting decision making for the management and planning of the transit network
- 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
- Managed updates and integration of spatial 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

EDUCATION

Queen's University Kingston, Canada
Master of Science, Computer Science

University of Ottawa Ottawa, Canada
Graduate Diploma, International Development

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