Patrick Harrison

GIS Technologist | B.Sc. Astrophysics

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Technical Skills

Geospatial skills
- ArcGIS suite
- FME
- Cartography
- Remote Sensing / Pix4D
- Raster and Vector Processing
- GPS/GNSS Data Collection

Programming
- Python
- SQL
- REST API
- Jira/Git/Bitbucket
- Data Structures & Algorithms

Project Management
- SOP development
- Agile/Scrum methodology
- Root cause analysis
- Quality Assurance & Risk Management

Experience

GIS Technologist   November 2025 - Current
Canada West Land Ltd.   *Calgary, AB*

- Automated GIS workflows from proprietary database systems to ArcGIS Online Using Feature Manipulation Engine.
- Created automated workflows using Feature Manipulation Engine to create custom reporting documents from Spatial Data.
- Created ArcGIS Experience Builder and Dashboards for real-time monitoring of project progress.

Streetlight Asset Management Summer Student   May 2025 - August 2025
City of Calgary   *Calgary, AB*

- Updated versioned enterprise geodatabase to ensure accuracy and integrity of asset data, supporting reliable infrastructure records across the business unit.
- Built custom Python toolboxes for ArcGIS Pro & ArcMap to automate spatial data updates, reducing processing time by 50% and improving data quality.
- Validated web application functionality utilizing the ESRI JavaScript SDK, testing 25 distinct field reporting workflows and operations management processes; ensured 100% alignment with defined business requirements and user stories.
- Created an interactive streetlight dashboard using ArcGIS Experience Builder, integrating geospatial data from multiple sources increasing decisiona timelines by 33%
- Developed training materials to support user adoption and enhance decision-making for operations and design teams.
- Managed the streetlight email inbox as the primary communication channel with contractors and developers, ensuring timely responses and coordination with the streetlight team.

Leveraging Time Series Imagery for Landcover Monitoring   September 2024 - December 2024
SAIT Student Project (Montrose Environmental)   *Calgary, AB*

- Partnered with an environmental consulting firm to apply ESRI Web GIS platforms (ArcGIS Online and Enterprise) for time series classification and visualization of satellite imagery, supporting long-term infrastructure monitoring.
- Led project coordination efforts, managing timelines, resources, and stakeholder engagement to ensure the successful delivery of geospatial analysis initiatives.
- Designed and deployed a custom Python package to automate the retrieval of time series imagery from the Planet Labs API, streamlining data acquisition for remote sensing projects.
- Conducted advanced analysis of time-series raster data using Normalized Difference Water Index (NDWI) and Space-Time Cubes to assess reservoir filling patterns, revealing key temporal and spatial trends for operational planning.
- Published and managed time-series raster datasets on ArcGIS Enterprise servers, optimizing data accessibility and enabling real-time visualization and analysis across teams.

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Finding Optimal Brewpub Locations in Calgary — May 2024 - August 2024
SAIT Student Project — *Calgary, AB*

- Compiled and organized demographic, financial and network datasets to perform a ranked index, overlay, and cluster analysis to narrow down optimal zones into 9 potential land parcels.
- Created visually engaging and informative maps using ArcGIS Pro to communicate project findings to both technical and non-technical audiences.
- Developed SOP and documentation for the project components as technical references for the projects workflow.

Software Development Engineer in Test (SDET) — July 2021 - November 2023
Infosys Ltd. — *Calgary, AB*

- Effectively collaborated to plan, develop, and execute automated testing strategies and test cases which reduced manual testing times by 1650 hours per year for a data pipeline with a group of 7 engineers.
- Overhauled an existing testing suite to employ a data-driven approach. This increased the efficiency of the testing suite by 25% and streamlined testing, thereby increasing delivery speed.
- Facilitated the development and quality assurance teams to implement Jenkins pipelines for continuous integration testing on 8 Linux servers. This initiative significantly enhanced testing quality, automation development and general team velocity during coding sprints.

Education

Bachelor of Applied Technology in Geographic Information Systems — May 2024 - Current
Southern Alberta Institute of Technology

- Vice President of GIS Student Club.
- *Key Coursework: Data Modeling, Data Capture, Enterprise and WebGIS, GIS Programming, Cartography*

Bachelor of Science in Astrophysics — September 2016 - May 2021
University of Calgary

- *Key Coursework: Observational Astrophysics, Mathematical Statistics, Computational Physics, Data Structures and Algorithms*

Certifications

Infosys Certifications

- Infosys Certified Cloud Testing Professional — October 2023
- Infosys Certified API Design Professional — September 2023
- Infosys Certified Selenium Testing with Java — November 2021
- Infosys Global, Agile Developer Certification — November 2021

ESRI Courses

- Basics of JavaScript Web Apps — February 2025
- Data Science Workflows Using ArcGIS Notebooks — February 2025
- Getting Started with Data Management — May 2024

Other Certifications

- Transport Canada: Pilot Certificate - Basic Drone Operations — January 2025