

# Amresh Sharma

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## PROFILE

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- **GIS Analyst & Software Engineer** with 2+ years of experience in geospatial data analysis, spatial databases (PostGIS), and GIS automation using **Python and ArcGIS Pro**. Skilled in building GIS products, web maps, and decision-support tools.
- Recently graduated with a Master's in Geomatics Engineering from the University of Calgary, specializing in spatial analysis, data mining, and geospatial solutions for data-driven decision making.

## WORK EXPERIENCE

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**Software Engineer (Remote Job)**, *Aerialarts Tech LLC Pvt. Ltd.* 07/2022 – 08/2023 | Kathmandu, Nepal

- Developed scalable geospatial data management solutions for an e-commerce platform, building full-stack GIS applications (Spring Boot, React.js, PostgreSQL/PostGIS) for **100,000+ spatial records** with built-in quality assurance to ensure reliable performance.
- Utilized ArcGIS Pro and Python geospatial libraries for spatial data preparation, feature extraction, and delivery zone optimization, resulting in a **15%** reduction in delivery times and improved customer satisfaction.
- Designed and maintained interactive GIS dashboards using Leaflet.js and Mapbox, enabling real-time spatial monitoring and operational insights.
- Collaborated in an Agile development environment, reducing feature delivery timelines by **30%** through iterative development and cross-functional teamwork.

## PROJECTS


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**Calgary Transit Companion | Project Link**  02/2025 – 04/2025

- Developed a real-time transit tracking and AI-powered route planning platform using Flask, SQLAlchemy, JWT Authentication, Scikit-learn, Google Generative AI, and Leaflet.js.
- Processed **over 1 million GTFS live feed records** and weather data, providing personalized routing and predictive transit insights.
- Designed natural language query dashboards and system-wide transit monitoring, enhancing commuter decision-making by **20%**.
- Authored technical documentation of API using Swagger, detailing authentication, transit data endpoints, user preferences, and AI/ML model interactions.

**Geospatial Web Mapping Service (WMS) Application with Leaflet Client**  10/2023 – 10/2023

- Technologies: MapServer, ArcGIS Pro, Leaflet.js, Python, GeoPackage, WMS/WFS services
- Deployed Web Mapping Services (WMS) via MapServer to share geospatial data layers (schools, roads, wards).
- Built Leaflet.js thin client integrating dynamic WMS layers with OpenStreetMap and Esri basemaps.

**Pedestrian Network Analysis — Nose Hill Park, Calgary**  10/2023 – 11/2023

- Technologies: ArcGIS Pro, Network Analyst, File Geodatabase, NAD 1983 3TM 114
- Designed and digitized pedestrian pathways using ArcGIS Pro, maintaining topological accuracy across more than 30 trail segments.
- Constructed network datasets and performed shortest-path analysis with Network Analyst, generating optimized pedestrian routes to support accessibility improvements.
- Created professional map layouts visualizing network structures and route optimizations.

**EV Charging Station Placement Optimizer**  02/2025 – 04/2025

- Developed a spatial decision-support tool to optimize EV charging station placement in Calgary, analyzing 20,000+ spatial, demographic, and infrastructure records using City of Calgary Open Data.
- Built data pipelines with Python, Pandas, and GeoPandas to integrate road networks, population density, and proximity to existing power infrastructure.
- Applied K-Means clustering, demand forecasting, and proximity analysis to identify high-demand locations, improving station coverage and accessibility.

- Delivered an interactive, scenario-based planning dashboard using Streamlit for dynamic site evaluation.

### Calgary Permits and Traffic Maps with Leaflet and Mapbox

02/2025 – 03/2025

- Built an interactive geo-web application using Leaflet.js, Mapbox, and the City of Calgary Open Data API to visualize live building permit and traffic incident data, updated daily.
- Implemented marker clustering, heatmaps, and time-based filtering to visualize accident density and permit distribution across over **1,000 data points**.

## EDUCATION

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### Master's in Geomatics Engineering(2 Years), University of Calgary

09/2023 – 04/2025 | Calgary, Canada

- Relevant Courses: Design and Implementation of GIS, Spatial Databases and Data Mining, Network Analysis, Photogrammetry, Advanced Geospatial Topics, Satellite Positioning, Digital Engineering in Python

### Bachelor's In Computer Science and Engineering(4 Years),

07/2018 – 07/2022 | India

SRKR Engineering College

- Relevant Courses: Data Structures, Object-Oriented Programming in C++, Operating Systems, Cloud Computing, DBMS, Java Programming, Python, Data Mining, IOT

## SKILLS

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**GIS & Geospatial Tools** — ArcGIS Pro, ArcGIS Online, Experience Builder, Web AppBuilder, StoryMaps, Dashboards, QGIS, Field Maps, Survey123, Google Earth Engine, GDAL, GeoPandas

**Programming & Automation** — Python (Pandas, NumPy, ArcPy, Flask, Scikit-learn, TensorFlow, PyTorch), JavaScript (Leaflet.js, Mapbox, React.js), PostgreSQL/PostGIS, MySQL


**Web GIS & Services** — Web Map Service (WMS), Web Feature Service (WFS), Representational State Transfer (REST) APIs, MapServer configuration


**Data Management** — GIS workflow automation, spatial database design, data integration, GeoPackage


**Soft Skills** — Leadership, cross-functional collaboration, client communication, problem-solving, technical mentoring

## CERTIFICATES

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
**GIS Basics, Esri ** — Learned fundamental GIS concepts and applied ArcGIS Pro for spatial analysis and business problem-solving.

**Designing and Implementing a Data Science Solution on Azure ** — Completed a 30-hour course focused on training, managing, and deploying machine learning models using Azure Machine Learning and cloud-based MLOps tools.

**Designing and Implementing a Microsoft Azure AI Solution ** — Audited a 45-hour project-based course on designing AI-enabled applications using Azure Cognitive Services, Bot Framework, and Cognitive Search, aligned with **Microsoft Exam AI-102** objectives.

## VOLUNTEER EXPERIENCE

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- Engaged in **coding events **, **hackathons **, and technical competitions, enhancing problem-solving abilities, adaptability, and creative thinking in fast-paced environments.
- Demonstrated strong teamwork, leadership, and communication skills while working on group projects and technical community initiatives.