Amresh Sharma

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PROFILE

- **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

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

Calgary Transit Companion 🔗   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

Master's in Geomatics Engineering(2 Years), *University of Calgary*   09/2023 – 04/2025 | Calgary, Canada
- <u>Relevant Courses</u>: 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
- <u>Relevant Courses</u>: Data Structures, Object-Oriented Programming in C++, Operating Systems, Cloud Computing, DBMS, Java Programming, Python, Data Mining, IOT

SKILLS

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

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

- 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.

REFERENCES

Available upon request