

Marcus Thorne

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Senior GIS Analyst & Spatial Database Specialist

Denver, CO · Open to Remote & Relocation

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PROFESSIONAL SUMMARY

Highly analytical and detail-oriented Geographic Information Systems (GIS) Specialist with over six years of professional experience designing, building, and optimizing enterprise spatial databases and Python-based automation pipelines. Expert in spatial data integration (ETL), remote sensing analysis, and high-fidelity cartographic production. Proven expertise in optimizing PostGIS databases and creating responsive web mapping applications to enable data-driven environmental and municipal decision-making.

TECHNICAL SKILLS

Spatial Databases	PostgreSQL, PostGIS, SpatiaLite, SQL, Query Optimization, pgRouting
GIS & Remote Sensing	ArcGIS Pro (ArcPy), QGIS (PyQGIS), Nexa Earth Engine, GRASS GIS, ENVI
Programming & ETL	Python (GeoPandas, Shapely, GDAL/OGR, Fiona, Rasterio), R, JavaScript, Bash
Web Mapping & Cloud	GeoServer, Mapbox GL JS, Leaflet, AWS (S3, RDS, EC2), Docker

PROFESSIONAL EXPERIENCE

Senior GIS Analyst

Nexa Spatial Technologies

Jan 2024 – Present

Denver, CO

- Designed and optimized enterprise PostGIS databases, reducing query times for large spatial datasets (10M+ rows) by 45% through strategic indexing, partitioning, and SQL query tuning.
- Developed automated Python ETL pipelines using GDAL/OGR, Fiona, and Shapely to ingest multi-source satellite imagery and vector data, saving 15+ engineering hours per week.
- Led the migration of legacy desktop GIS workflows to cloud-based WebGIS solutions using QGIS Server, GeoServer, and Leaflet, expanding spatial data access to 80+ internal stakeholders.

Spatial Data Engineer

Vertex Analytics

Mar 2021 – Dec 2023

Boulder, CO

- Built a custom Python-based raster analysis toolbox (ArcPy, GDAL) for automated wildfire risk assessment and canopy change detection, utilized in 12 regional consulting projects.
- Managed PostgreSQL/PostGIS databases, writing complex SQL queries and utilizing pgRouting for optimal logistics routing and accessibility mapping.
- Deployed mobile data collection solutions (QField), establishing real-time synchronization pipelines back to central databases.

GIS Specialist (Intern)

Meridian Resource Partners

Jun 2020 – Feb 2021

Fort Collins, CO

- Digitized and georeferenced historical topographic maps, maintaining topology rules and metadata standards to ensure database integrity.
- Produced high-quality cartographic figures for environmental impact assessments (EIA) using ArcGIS Pro.

KEY PROJECTS

EcoPulse: Automated Wildfire Risk Modeling

Python, GeoPandas, Rasterio

Developed an automated pipeline in Python using GeoPandas, Rasterio, and Nexa Earth Engine API to calculate dynamic wildfire risk metrics using Sentinel-2 imagery and historical fire patterns.

UrbanTransit: PostGIS Routing & Accessibility Analysis

PostgreSQL, pgRouting, Leaflet

Engineered a pgRouting-based network model of public transit and pedestrian pathways, delivering routing visualizations via an interactive Leaflet web interface.

EDUCATION & CREDENTIALS

Master of Science in Geographic Information Science

Vertex University, 2020

Bachelor of Science in Environmental Science (Minor in Computer Science)

Apex State University, 2018

GIS Professional (GISP) – GIS Certification Institute (ID: 10492)

2023

Esri Enterprise System Design Associate

2022