Dheeraj Chand

Professional Title

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PROFESSIONAL SUMMARY

Senior Data Engineer with 21 years of expertise in geospatial data platforms, big data processing, and distributed systems architecture. Deep specialist in Apache Spark/Sedona for large-scale geospatial analytics, with fluency across ESRI, OSGeo, and SAFE FME technology stacks. Proven track record architecting production systems serving thousands of users, implementing PySpark pipelines processing billions of spatial records, and leading engineering teams. Expert in full-stack geospatial development from PostGIS database optimization to React-based mapping interfaces.

CORE COMPETENCIES

Big Data & Geospatial Processing

Apache Spark: PySpark, Spark SQL, Scala Spark, Sedona (geospatial), distributed processing • Geospatial Databases: PostGIS (advanced), Oracle Spatial, spatial indexing, query optimization • ETL/ELT: dbt, Informatica, CDAP, custom PySpark pipelines, data governance frameworks • Cloud Platforms: AWS (EC2, RDS, S3), Snowflake, Hadoop clusters, distributed computing • Streaming: Real-time data processing, Kafka integration, event-driven architectures

GIS Technology Stack

ESRI: ArcGIS Server, ArcGIS Pro, enterprise geodatabases, ModelBuilder, ArcPy scripting • OSGeo: QGIS, GRASS GIS, GDAL/OGR, GeoServer, spatial analysis workflows • SAFE FME: Data transformation, format conversion, spatial ETL, enterprise integration • Web Mapping: OpenLayers, Leaflet, MapBox, tile servers, WMS/WFS services • Spatial Analysis: Clustering algorithms, boundary estimation, network analysis, geostatistics

Software Development & Architecture

Python: Django/GeoDjango, Flask, Pandas, NumPy, SciKit-Learn, spatial libraries • JVM: Scala (Spark), Java (GeoTools, enterprise), Groovy scripting • Web Technologies: React, JavaScript, d3.js, RESTful APIs, microservices • Databases: PostgreSQL/PostGIS, Oracle, MySQL, MongoDB, spatial optimization • DevOps: Docker, Kubernetes, CI/CD (GitLab, GitHub), Airflow, Celery, nginx

PROFESSIONAL EXPERIENCE

PARTNER & SENIOR DATA ARCHITECT

Your Company Name, Your City, ST | 2005 – Present

Geospatial Data Platform Architecture and Big Data Engineering

- ■ Architected and engineered production geospatial platforms serving thousands of analysts
- ■ Built enterprise-scale ETL pipelines using PySpark and Sedona processing billions of geospatial records with advanced spatial clustering algorithms
- ■ Developed multi-tenant data warehouse integrating Census, electoral, and demographic data using PostGIS and Spark SQL optimization
- ■ Implemented fraud detection systems processing multi-terabyte datasets with real-time spatial analysis capabilities
- ■ Created parametric boundary estimation algorithms using PostGIS and GRASS without machine learning dependencies
- ■ Led integration of ESRI ArcGIS Server, OSGeo tools (QGIS, GRASS), and SAFE FME for enterprise geospatial workflows

Additional experience and project details available on LinkedIn

KEY ACHIEVEMENTS AND IMPACT

Geospatial Platform Engineering

- ✓ Architected redistricting platform processing Census data for thousands of analysts with real-time PostGIS collaborative editing

✓ Built boundary estimation system using advanced PostGIS algorithms and incomplete data without machine learning requirements
✓ Developed geospatial simulation platform integrating multi-agent modeling with web interface