

GeoSPark Spatial Analytics Training

COURSE CONTENT

GET IN TOUCH



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About Multisoft

Train yourself with the best and develop valuable in-demand skills with Multisoft Systems. A leading certification training provider, Multisoft collaborates with top technologies to bring world-class one-on-one and certification trainings. With the goal to empower professionals and business across the globe, we offer more than 1500 training courses, which are delivered by Multisoft's global subject matter experts. We offer tailored corporate training; project Based Training, comprehensive learning solution with lifetime e-learning access, after training support and globally recognized training certificates.

About Course

GeoSPark Spatial Analytics Training provided by Multisoft Systems is designed to equip professionals with the advanced skills needed to analyze and interpret spatial data effectively. This comprehensive course covers the essentials of geographic information systems (GIS), emphasizing real-time analytics and data integration to help participants understand the spatial aspects of data.

Module 1: Introduction to GeoSpark

- ✓ What is GeoSpark and its integration with Apache Spark?
- ✓ Key concepts like Spatial Resilient Distributed Datasets (SRDDs)
- ✓ Benefits of using GeoSpark for large-scale spatial data processing

Module 2: Spatial Data Fundamentals

- ✓ Geospatial data formats (shapefiles, GeoJSON, etc.)
- ✓ Coordinate reference systems (CRS) and projections
- ✓ Spatial data structures (like R-Trees)
- ✓ Data cleaning and preprocessing techniques for spatial data

Module 3: GeoSpark API and Operations

- ✓ Loading spatial data into GeoSpark
- ✓ Basic spatial operations (point-in-polygon, distance calculations, buffering)
- ✓ Spatial joins (joining spatial data with non-spatial data)
- ✓ Spatial aggregations (calculating statistics within spatial regions)

Module 4: Advanced Spatial Analysis Techniques

- ✓ Spatial autocorrelation analysis (Moran's I)
- ✓ Hotspot analysis (Getis-Ord G_i^*)
- ✓ Spatial interpolation (Inverse Distance Weighted, Kriging)
- ✓ Network analysis (shortest path, routing)

Module 5: Geovisualization with GeoSpark

- ✓ Creating interactive maps using GeoSpark results
- ✓ Visualizing spatial patterns and trends

Module 6: Hands-on Coding with GeoSpark

- ✓ Implementing spatial analysis workflows using Scala or Python
- ✓ Working with real-world spatial datasets (e.g., crime data, weather data, census data)
- ✓ Optimizing GeoSpark queries for performance

Module 7: Potential use cases for GeoSpark Spatial Analytics

- ✓ Analyzing crime patterns across a city
- ✓ Identifying optimal locations for new businesses
- ✓ Studying the impact of environmental factors on a region
- ✓ Tracking real-time location data from mobile devices
- ✓ Analyzing customer demographics based on geographic location