Applying Spatial Analysis Techniques to Make Better Decisions

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Topics

• Spatial Analysis Overview

• Demos and examples
  - Various types of spatial analysis
  - From basic to more advanced
  - Mixed ArcGIS products

• Take away points
Spatial Analysis Overview
Spatial Analysis
Gain value from location data to make better decisions

Understand where
Determine how things are related
Find the best locations and paths
Detect and quantify patterns
Make predictions
Spatial Analysis
Top Trends

- More accessible
- Big Data
- Distributed
- Real-time
- Space and Time
- Data visualization
- Data Science Integration
- Intuitive and responsive
- Less coding
- Analytics for new audiences
- Predictive Analytics
ArcGIS - Comprehensive Analytics Platform

Analysis Experience for Everyone

Online Analytics

Fast Data Discovery & Analytics

Professional Desktop Suite

Real-time Analytics

Python Notebooks & R Integration

Big Data Analytics

Location-based Content & Services

Focused Analytical Solutions
Spatial Analysis
Our Goal

- Advancing Spatial Data Science
- Location Intelligence for Everyone
- Delivering quality tools meeting customer expectations
Demos and Examples
Analysis using Insights
Analysis using ArcGIS Pro
Demo Review

Add Geometry Attributes → Size of fire in acres
Add Field → % change in fire area day to day
Calculation Field → Impact of the affected areas
Summarize Within → Total population of affected area
Enrich Layer
Demonstration review

- Start a new model
  - Drag and drop from toolbox and history
    - Chain and connect tools and data
      - Run in ModelBuilder
        - Fire Analysis
        - Summarize Within
        - Buffer, Enrich Layer
        - Validate model result
Demonstration review

1. Make a new script tool
2. Specify parameters
3. Prepare Python script
4. Run the script tool
5. Fire Analysis
6. Input, Output
7. Summarize Within, Buffer, Enrich Layer
8. Validate result
Analyze Big Data
Demo Review

1. Add gas data
2. Perform analysis
3. Aggregate Points
   - In Space and Time
4. How does the gas price pattern change over time?
5. Big Data File Share
6. Review results
Integrate Data Science
Demo Review

Create Training Dataset

Create Explanatory Variable Raster

Empirical Bayesian Kriging

Create a layer with predictor attributes

Forest-based Classification

Review results
Take Away Points
Take away points …

- Spatial analysis brings the true power of GIS

- ArcGIS is a comprehensive analytics platform, provides an analysis experience for everyone

- Esri continues to advance Spatial Data Science and make location intelligence available to all
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