Image Analysis in ArcGIS Pro

SGD$960.00 / person

ArcGIS Image Analyst for ArcGIS Pro provides tools for advanced image interpretation, exploitation, and geospatial analysis on an array of imagery modalities. Automate and speed up workflows such as feature extraction, image classification, multidimensional analysis, and change detection with a robust set of image-based machine and deep learning tools, raster functions, and geoprocessing tools. Benefit from quick analysis results using on-the-fly image processing and raster analytics.

Level: Intermediate
Course Duration: 2 days

What is the course about?

This course is for GIS professionals and imagery analysts in the private sector and civilian government agencies who need to extract meaningful information from satellite imagery, unmanned aerial vehicle (UAV)-collected data, and other imagery formats. Workflows and considerations to display, process, and create derived raster products using ArcGIS Pro and ArcGIS Image Analyst are covered. You'll explore common imagery applications, including disaster recovery, damage assessment, and forest canopy assessment.

Who is the target audience?

This course is suitable for GIS analysts and specialists, who need to perform visualization and analysis of images.

Are there any prerequisites?

- Completion of ArcGIS Pro: Essential Workflows or Migrating from ArcMap to ArcGIS Pro or equivalent knowledge. (https://esrisingapore.com.sg/store/arcgis-pro-essential-workflows or https://esrisingapore.com.sg/store/migrating-from-arcmap-to-arcgis-pro)

What skills will I learn?

After completing this course, participants will be able to:

- Apply dynamic raster functions to enhance imagery display and perform change detection.
- Perform image classification and assess the accuracy of results.
- Post-process classified thematic rasters to support analysis needs.
- Work with derived information products including digital elevation models.

Topics

1. Raster functions

- Manipulating raster data
- What are raster functions?
- Benefits of raster functions
- Consider raster function parameters
- Types of raster functions

2. Raster function templates

- What are raster function templates?
- Raster function template components
- Evaluate a raster function template

3. Raster-based change detection

- Change detection types
- Choosing types of change detection
- Raster-based change detection workflow
- Preprocessing methods for change detection

4. Change detection for operations

- Defining image classification
- Describing image classification outputs
- Image classification types
- Image classification methods
- Choosing image classification techniques

5. Classification workflows

- Unsupervised image classification workflow
- Supervised image classification workflow
- Classifying a raster with the Image Classification Wizard

6. Segmentation

- What is segmentation?
- Segmentation parameters
- Segmentation parameter exploration

7. Training the classifier

- Training sample considerations
- Types of image classification algorithms

8. Classification evaluation

- Pixel Editor functionality
- Compare Pixel Editor operations
- Postprocessing classification results
- Accuracy assessment workflow
- Accuracy assessment statistics

9. Image analysis with deep learning

- What is deep learning?
- Deep learning tasks for image analysis Model Inferencing in ArcGIS Pro
- The deep learning analysis workflow

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