Training the GIS Professional

AVINEON TENSING

Applying Generative AI in Esri Data Interoperability Workflows - 1 day

Overview

This one-day course takes a hands-on approach with practical application of Generative AI (GenAI) within Esri Data Interoperability workspaces. Building on foundational Data Interoperability Extension skills, you'll discover how to integrate Large Language Models (LLMs) from providers like OpenAI, Anthropic and Gemini to extract, classify, augment and transform unstructured content into clean, structured data. The training includes practical exercises that help you move beyond manual or rules-based processes to create robust AI-powered workflows.

This course will be delivered by Avineon Tensing, a Partner of Esri UK.

Who should attend

- GIS Analysts
- GIS Technical Leads
- Data Management Professionals
- GIS Application Developers

Goals

- Effective prompt writing techniques and managing dynamic JSON outputs from AI services.
- A practical comparison of AI models from OpenAI, Gemini, Anthropic and local models using Ollama, understanding when to use each.
- Learn how to incorporate custom image recognition using models trained and deployed in Roboflow as part of a data workflow.
- PDF document extraction and conversion into spatially enabled feature class attributes.
- Sentiment analysis and text classification techniques for unstructured text or image content.

Topics Covered

- Introduction to generative AI in spatial data workflows, understanding the value of structured data extraction as a key LLM capability.
- A comparison of cloud-based and local AI models and setting up API connections to AI services using certified FME Hub Transformers.
- Prompt engineering for geospatial data processing, writing effective prompts, handling dynamic JSON and GeoJSON responses and strategies for consistent structured outputs from generative AI.
- Working with multiple AI providers (including OpenAI, Gemini and others) APIs, understanding the pros and cons of each provider and managing API keys and authentication within the Data Interoperability Extension.
- Overview of open-source AI models, their value in addressing security and data privacy requirements, the capabilities and performance considerations.

Topics Covered Continued

- Learn how custom image classification models can be trained and how such computer vision models can be used within Data Interoperability workflows, including their practical applications for feature attachment classification.
- Document (unstructured data) extraction including extracting tables and spatial data from PDF documents, converting unstructured document content to feature attributes and handling multi-page document extraction.
- Text classification and sentiment analysis, classifying unstructured text content, performing sentiment analysis and enriching geodatabase feature attributes with AI-derived values and Google Search-grounded data.
- Building reusable workflows with AI, creating modular workspace designs, error handling for AI responses and strategies for scaling AI integration across your ArcGIS Enterprise or ArcGIS Online environment.

Prerequisites

Attendees should have a basic working knowledge of the Esri Data Interoperability Extension for ArcGIS Pro, including understanding of readers, writers and transformers.

Attendees should understand how to:

- Know how to run a Data Interoperability Workspace
- Work with readers and writers for common spatial data formats including Shapefile, GeoJSON and file geodatabase
- Apply basic transformers for data manipulation

This course does not require prior AI or machine learning experience.

Contact Us

For GIS training enquiries and bookings visit esriuk.com/learning, email us at learning@esriuk.com or call us on 01296 745504

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