



CONNECTING
COMMUNITIES



THE SOUTHERN AFRICA
ESRI USER CONFERENCE
2023

THE SOUTHERN AFRICA ESRI USER CONFERENCE TECHNICAL WORKSHOPS AND HANDS-ON TRAINING

TECHNICAL WORKSHOP DESCRIPTIONS

WORKSHOP 1

MAXIMIZING THE POWER OF WEB GIS WITH ARCGIS ONLINE (LEVEL: BASIC)

Wednesday 25 October 11h00 – 12h30

Overview:

New to ArcGIS Online? Learn how to set up your account, add and manage data and create and share your maps and start to explore the power of Web GIS.

This workshop is designed for individuals who are new to ArcGIS Online and want to learn the basics of using the platform for creating, managing, and sharing GIS maps and data. Participants will learn how to create an ArcGIS Online account, navigate the user interface, add, and manage data, and create and share maps with others. By the end of the workshop, participants will have a basic understanding of how to use ArcGIS Online for their GIS mapping needs and will be able to create and share their web maps.

The workshop will cover the following topics:

- Introduction to ArcGIS Online and its capabilities
- Setting up an ArcGIS Online account and understanding licensing options
- Navigating the ArcGIS Online user interface
- Adding and managing data in ArcGIS Online
- Creating and editing web maps
- Adding and configuring layers to web maps
- Sharing maps with others and publishing web apps
- Exploring ArcGIS Online apps and templates
- Best practices for working with ArcGIS Online



WORKSHOP 2

BEST PRACTICES FOR ADMINISTERING ARCGIS ENTERPRISE (LEVEL: ADVANCED)

Wednesday 25 October 14h00 – 15h30

Overview:

Extend your knowledge on how to design, customise, administer, optimise, and automate ArcGIS Enterprise.

This advanced workshop is designed for individuals who have experience using ArcGIS Enterprise and want to expand their skills in advanced system administration, security, and customisation. Participants will learn how to configure and manage ArcGIS Enterprise components, secure their environment, and customise the user experience. The ability to apply advanced system administration, security, and customisation methods in ArcGIS Enterprise in their workplace environments will be provided to participants as they leave the workshop. Participants will also learn how to automate workflows and tasks to enhance the performance and scalability of their ArcGIS Enterprise deployment, which will help them become more productive.

The workshop will cover the following topics:

- Advanced system architecture and design considerations
- Customising the ArcGIS Enterprise portal interface, including branding, themes, and templates
- Implementing security best practices, including SSL/TLS encryption, multi-factor authentication, and OAuth
- Configuring high availability and disaster recovery
- Automating tasks and workflows using ArcGIS Notebooks
- Best practices for scaling and optimizing ArcGIS Enterprise for large organizations

WORKSHOP 3

MASTERING ADVANCED REMOTE SENSING USING ARCGIS PRO (LEVEL: ADVANCED)

Thursday 26 October 10h30 – 12h30

Overview:

Learn more about advanced remote sensing concepts and how to apply image processing and analysis workflows including raster functions, change detection and machine learning.

This workshop is intended for advanced users with experience using ArcGIS Pro and understanding the



foundational imagery workflows in ArcGIS. Users who explore imagery and are interested in learning more about advanced image analysis techniques like deep learning and enhanced imagery workflows should attend this session. Participants will learn how to use cutting-edge techniques to manage their data and extract products from imagery for visualisation and analysis using ArcGIS Pro. By the end of the workshop, participants will have a thorough understanding of advanced image analysis techniques in ArcGIS Pro and will be able to apply these techniques to real-world remote sensing applications.

The workshop will cover the following topics:

- Introduction to advanced remote sensing concepts and techniques (multidimensional rasters, image services)
- Processing and enhancing imagery using raster functions (raster functions and function chains)
- Change detection analysis (CCDC)
- Introduction to deep learning and machine learning concepts and techniques (Concepts)
- Preparing data for machine learning model training (Workflow and tools)
- Building and training deep learning models for image classification and object detection using ArcGIS Pro (Demo)
- Best practices for working with large datasets and image analysis workflows (Mosaics and services)

WORKSHOP 4

EXPLORING ARCGIS DATA MANAGEMENT TECHNIQUES

(LEVEL: INTERMEDIATE / ADVANCED)

Thursday 25 October 14h00 – 15h30

Overview:

Enhance your ArcGIS Pro skills by learning more about how to manage, store, organise and maintain GIS data.

This workshop is designed for users who have used ArcGIS Pro before and want to improve their data management skills. Participants will gain knowledge of how to use ArcGIS Pro to manage, store, organise, and maintain GIS data.

The workshop will cover the following topics:

- Understanding data management concepts and best practices

- Organising GIS data using folders and geodatabases
- Creating and maintaining metadata
- Managing feature classes and tables
- Creating and managing relationships between datasets
- Editing and updating data in ArcGIS Pro
- Data backup and recovery
- Sharing and distributing data

HANDS-ON TRAINING DESCRIPTIONS

TRAINING SESSION 1

RETHINK HOW YOU MAKE YOUR MAPS (LEVEL: INTERMEDIATE)

Wednesday 25 October 11h00 – 12h30

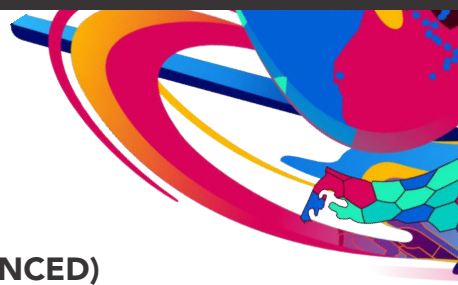
Overview:

Learn how to use the Smart Mapping capabilities of ArcGIS to create visually appealing and informative maps using data-driven styles, colour ramps, and symbology.

This workshop is designed for individuals who have experience using ArcGIS for cartography and want to learn how to use the Smart Mapping capabilities of ArcGIS to create visually appealing and informative maps. Participants will learn how to use data-driven styles, colour ramps, and symbology to effectively communicate information through maps. By the end of the course, participants will have a thorough understanding of Smart Mapping techniques in ArcGIS and will be able to apply these techniques to create visually compelling and informative maps. Participants will also learn how to customise their maps for specific audiences and purposes, and how to effectively share their map products.

The course will cover the following topics:

- Leveraging Esri's smart mapping
- Creating beautiful and easy-to-understand maps in just a few clicks
- Using smart mapping to help perform basic and repetitive tasks to save you time
- Using a new cross-platform expression language called Arcade
- Creating new dynamic data from your data for use in symbology, labelling, and pop-ups



TRAINING SESSION 2

GO FURTHER WITH MICROSOFT AND ESRI PRODUCTS (LEVEL: ADVANCED)

Wednesday 25 October 11h00 – 12h30

Overview:

Learn how to leverage the power of location services that combine business data and workflows with spatial data from within your favourite Microsoft apps including Excel, Teams, Power Automate and Power BI.

“Go Further with Microsoft and Esri Products” is an advanced-level course that focuses on integrating the capabilities of Microsoft and Esri products to provide powerful geospatial solutions. The course is designed for professionals and development enthusiasts who are already familiar with the basic concepts of both Microsoft and Esri products. In this course, participants will explore how to use the power of Microsoft and ArcGIS Apps to enrich the visualisation and analysis of geospatial data stored.

The course covers topics, including:

- Integrating ArcGIS with Power Platform
- Get started with the Power Automate
- Access your ArcGIS maps and apps within Microsoft Teams to transform teamwork
- Bring data from spreadsheets, graphs, and presentations to life using interactive maps
- Map and analyse data in Microsoft Power BI.

TRAINING SESSION 3


GETTING STARTED WITH ARCGIS PRO (LEVEL: BASIC)

Wednesday 25 October 14h00 – 15h30

Overview:

Learn how to navigate ArcGIS Pro by practising the core concepts of GIS from data management and map making to geoprocessing, editing and spatial analysis.

This course is designed for all users that are new to ArcGIS Pro and those migrating from ArcMap who want to learn how to use ArcGIS Pro, this is a powerful desktop mapping and data analysis application. The course will provide a comprehensive introduction to ArcGIS Pro, including basic concepts of GIS, data management, map making, and geoprocessing. Participants will learn how to create, edit, and manage data, perform spatial



analysis, and create professional-quality maps. After completing this course, you will be able to use ArcGIS Pro to visualise data to solve spatial problems and perform analysis to prepare data for sharing.

The course will cover the following topics:

- Get started with ArcGIS Pro
- Explore data in ArcGIS Pro
- Visualise data to solve spatial problems.
- Understanding edit techniques in ArcGIS Pro
- Managing and sharing projects

TRAINING SESSION 4

IMPLEMENT A MODERN INTEGRATED SPATIAL DATA INFRASTRUCTURE (LEVEL: INTERMEDIATE)

Wednesday 25 October 14h00 – 15h30

Overview:

Learn how to reach a broad audience by configuring SDI web portals with Sites and Open Data to share information, data and apps that encourage knowledge sharing, engagement, and collaboration.

ArcGIS Online and ArcGIS Enterprise both provide an easy-to-configure web-based engagement platform that helps organisations work more effectively with their communities by sharing data and information, encouraging engagement, and providing overall transparency. Learn how to use ArcGIS capabilities to share authoritative spatial data, maps, and apps through the configurable website builder as well as the open data portal. Add collaboration tools to coordinate and engage with external agencies, community partners, volunteers, and citizens to tackle projects that matter most in your community.

The course will cover the following topics:

- Build a basic external facing website with ArcGIS Sites
- Apply best practices to design a hub site that supports data-driven initiatives.
- Share your organisation’s authoritative data as maps, dashboards, and other information products to a hub site.
- Configure the open data portal to share authoritative data



TRAINING SESSION 5

SPATIAL DATA SCIENCE & ANALYTICS WITH ARCGIS PRO

(LEVEL: ADVANCED)

Thursday 25 October 10h30 – 12h30

Overview:

Advance your skills in applying analytical methods and spatial algorithms, including machine learning, to uncover hidden patterns through spatial data science.

Spatial data science allows analysts to extract deeper insight from data using a comprehensive set of analytical methods and spatial algorithms, including machine learning and deep learning techniques.

This course explores the application of spatial data science to uncover hidden patterns and improve predictive modelling. You'll work with powerful analytical tools in Esri's ArcGIS software and learn how to integrate popular open data science packages into your analyses and learn how to present your data with informative maps, charts, and narratives.

The course will cover the following topics:

- Understand how spatial data science helps uncover hidden patterns.
- Use ArcGIS data engineering methods and visualization tools to prepare data for spatial analysis.
- Gain hands-on experience performing suitability analysis, predictive modelling, space-time pattern mining, and object detection.

TRAINING SESSION 6


TAKING YOUR GIS TO THE NEXT LEVEL WITH WEB APPS (LEVEL: INTERMEDIATE)

Thursday 25 October 10h30 – 12h30

Overview:

Learn how to quickly create professional, powerful, and focused web apps to share your maps and spatial insights with a broad audience without any coding.

Instant Apps are the next generation of configurable apps. ArcGIS Instant Apps provide a quick and intuitive way to transform your maps into interactive web apps for your users. In this course, you will learn how to use instant apps to share your maps as apps so that your audience can explore and engage with your data and maps including a gallery of no-code templates that you can select from to share your map.



ArcGIS Experience Builder empowers you to quickly transform your data into compelling, dynamic, and flexible web apps without writing code. You will learn how to create a basic experience from one of the many templates and explore the Experience Builder features available to tailor the experience to your audience.

The course will cover the following topics:

- Create focussed web apps that amplify your maps and data.
- Understand the building blocks of ArcGIS Experience Builder.
- Choose a template and add widgets to quickly build an app, then customise the app's layout and design features to suit your needs.
- Export apps to create reusable templates that can be shared with your ArcGIS organisation.
- Integrate 2D and 3D Data

TRAINING SESSION 7

MANAGING AND ACCESSING YOUR IMAGERY WITH ARCGIS (LEVEL: BASIC)

Thursday 25 October 14h00 – 15h30

Overview:

Learn the fundamentals of loading, managing and publishing your own imagery data in ArcGIS Pro as well as performing basic analysis and applying raster functions.

Remote sensing is the process of extracting relevant information from imagery. This training will give you hands on exposure to the tools available in ArcGIS Pro to load, visualise and manage your imagery. ArcGIS Pro also contains tools and raster functions that work with imagery and raster data for analysis. In this session you will learn how to automate your analysis with raster functions.

One way to share data with members in your organisation is to host an imagery layer on ArcGIS Enterprise.

You will also learn how to incorporate image services in your apps.

- Load and optimise the rendering of imagery
- Manage large collections of imagery with mosaic datasets
- Automate analysis and rendering with Raster functions
- Publish image services
- Incorporate images services in your apps.



TRAINING SESSION 8A

SUPPORTING FIELD OPERATIONS WITH ARCGIS APPS

(LEVEL: BASIC / INTERMEDIATE)

Thursday 25 October 14h00 – 15h30

Overview:

Learn how to leverage ArcGIS Workforce and ArcGIS Field Maps to create an end-to-end field work solution with real time updates and operational dashboards.

TRAINING SESSION 8B

ADVANCED TECHNIQUES FOR CAPTURING HIGH QUALITY DATA IN THE FIELD

(LEVEL: ADVANCED)

Thursday 25 October 16h00 – 17h00

Overview:

Master the skill of automated data capture, immediate validation, conditional rules and other advanced methods of creating smarter forms with ArcGIS Survey123.

Learn how ArcGIS supports a complete field data management workflow—from the office to the field, in the field, and back to the office. You will learn how to use ArcGIS Apps to help plan and coordinate field operations. Learn best practices to configure and deploy ArcGIS field-productivity apps to meet your data collection needs. You will have the opportunity to use your own iOS or Android device to complete some course exercises. In this course, you will also learn how to author forms for field data collection with ArcGIS Survey123 to create, share, and analyze surveys on the Web.

The course will cover the following topics:

- Exploring ArcGIS Field Maps
- Extending ArcGIS Survey123 capabilities
- Managing Field Operations.
- Monitor Field Activities in real-time
- Configure ArcGIS QuickCapture for field operations