ArcGIS Insights: Powerful Analysis Made Simple

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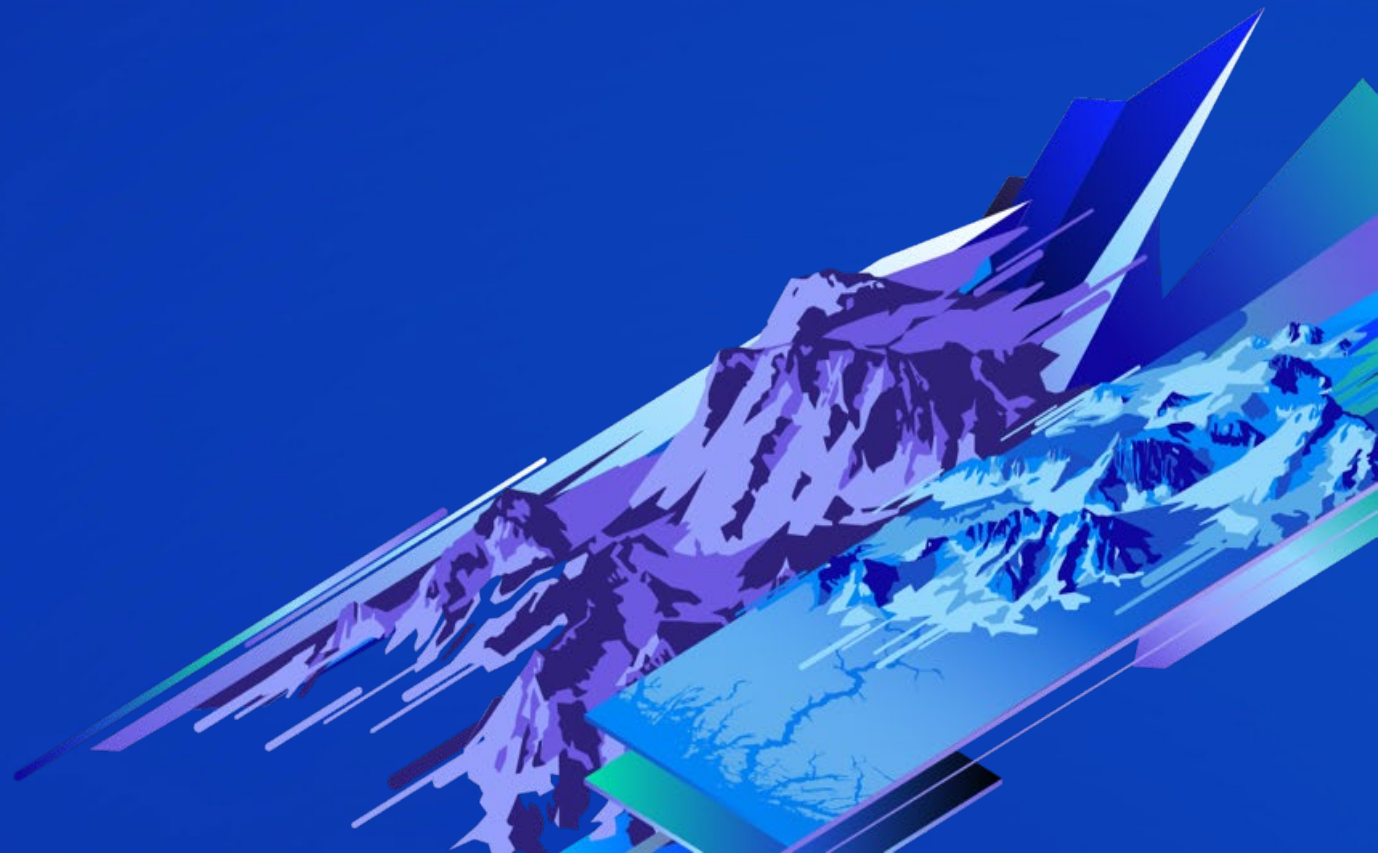
Solution Engineer

Esri Southeast User Conference

Agenda

- Introduction: What is ArcGIS Insights?
- Capabilities
- Demonstration
- Discussion



ArcGIS Insights

Self-service location analytics

- Visualization & Analysis program
- Modern, intuitive, familiar form factor
- Solution for analysts of any skill level

Accelerate your analysis.

Immediately start exploring your data.

Integrate non-spatial data

Incorporate data from other departments into your analysis.

Relate to decision-makers

Communicate results using interactive charts, tables, maps, and storytelling

Capabilities

Data Access & Preparation

Exploratory Analysis

Spatial, Statistical, & Temporal Analysis

Reporting, Storytelling, & Model Sharing

Access Data Where it Lives

Local File

SharePoint
& OneDrive

Enterprise GIS

Relational
Database

Cloud Data Warehouse

Custom Data
Connector

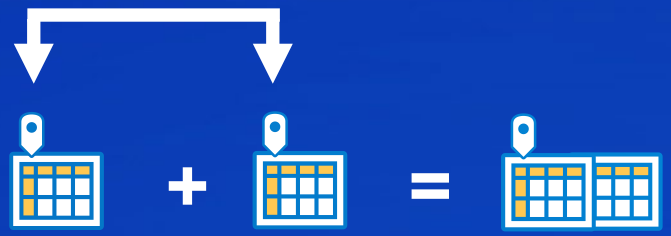
Scripting

Prepare Data for Use

- Coordinates
- Address geocoding
- Well known boundaries
- Custom area, lines, and places

Enable location

Enrich with new variables



Join tables

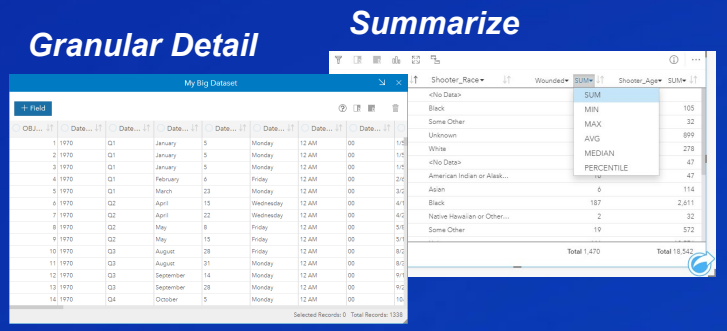
Modify column format

Calculate new dimensions

Scripting

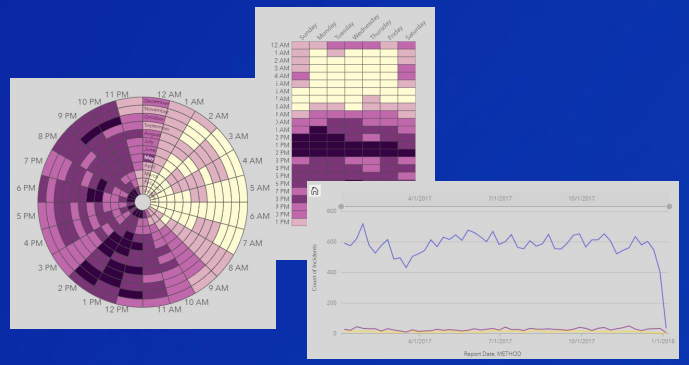
Exploratory & Visual Analysis

Maps



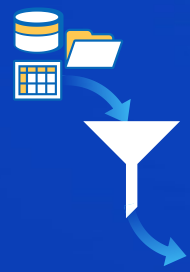
Tables

Charts



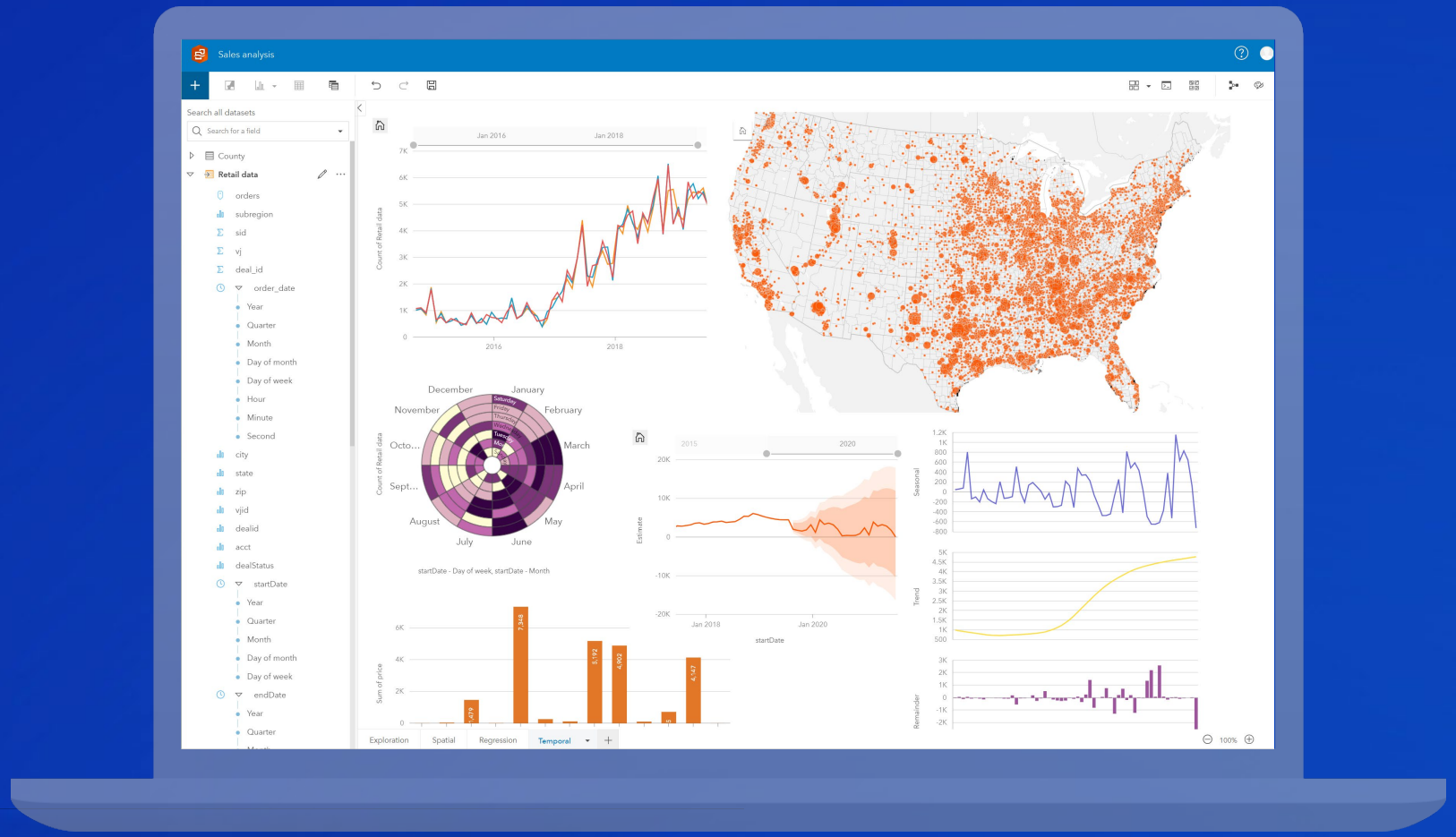
Time Series

Interactivity



Filters

Demonstration



Insights for ArcGIS®

Data type: Qualitative Quantitative Temporal

Measure: ascertain the size, amount, or degree of (something)


A bar graph uses either horizontal or vertical bars to show comparisons among categories. They are valuable to identify broad differences between categories at a glance.


A treemap shows both the hierarchical data as a proportion of a whole and, the structure of data. The proportion of categories can easily be compared by their size.


Bubble charts represent numerical values of variables by area. With two variables (category and numeric), the circles placed so they are packed together.


A heat chart shows total frequency in a matrix. Values in each cell of the rectangular grid are symbolized into classes.

Relationship: a connection or similarity between two or more things or, the state of being related to something else


A choropleth map allows quantitative values to be mapped by area. They should show normalized values not counts collected over unequal areas or populations.


A chord diagram visualizes the inter-relationships between categories and allows comparison of similarities within a dataset or, between different groups of data.


Scatterplots allow you to look at relationships between two numeric variables with both scales showing quantitative variables. The level of correlation can also be quantified.


Link analysis is used to investigate relationships between entities where and an entity is an object, person, place or event. Links connect two or more entities.


Spider lines , also termed desire lines, show paths between origins and destinations. They show connections between places.

Change: process through which something becomes different, often over time


A bar graph uses either horizontal or vertical bars to show comparisons among categories. They are valuable to identify broad differences between categories at a glance.


A heat chart shows total frequency in a matrix. Using a temporal axis values, each cell of the rectangular grid are symbolized into classes over time.


Bubble charts with three numeric variables are multivariate charts that show the relationship between two values while a third value is shown by the circle area.


Graduated symbol maps show a quantitative difference between mapped features by varying symbol size. Data are classified with a symbol assigned to each range.


A Density/heat map calculates spatial concentrations of events or values enabling the distribution to be visualized as a continuous surface.


A Data clock creates a circular chart of temporal data, commonly used to see the number of events at different periods of time.


Line graphs visualize a sequence of continuous numeric values and are used primarily for trends over time. They show overall trends and changes from one value to the next.


A combo chart combines two graphs where they share common information on the x-axis. They allow relationships between two datasets to be shown.

Interaction: flow of information, products or goods between places


A chord diagram visualizes the inter-relationships between categories and allows comparison of similarities within a dataset or, between different groups of data.


Spider lines, also termed desire lines, show paths between origins and destinations. Flow maps show directional connections and flow between places.

Distribution: the arrangement of phenomena, could be numerically or spatially


Histograms show the distribution of a numeric variable. The bar represents the range of the class bin with the height showing the number of data points in the class bin.


A box plot displays data distribution showing the median, upper and lower quartiles, min and max values and, outliers. Distributions between many groups can be compared.


A choropleth map allows quantitative values to be mapped by area. They should show normalized values not counts collected over unequal areas or populations.


Graduated symbol maps show a quantitative difference between mapped features by varying symbol size. Data are classified with a symbol assigned to each range.


A Density/heat map calculates spatial concentrations of events or values enabling the distribution to be visualized as a continuous surface.


A unique symbol map (areas or points) allows descriptive (qualitative) information to be shown by location. Areas have different fills and points can be geometric or pictorial.

Part-to-whole: relative proportions or percentages of categories, showing the relationship between parts and whole


Donut charts are used to show the proportions of categorical data, with the size of each piece representing the proportion of each category.

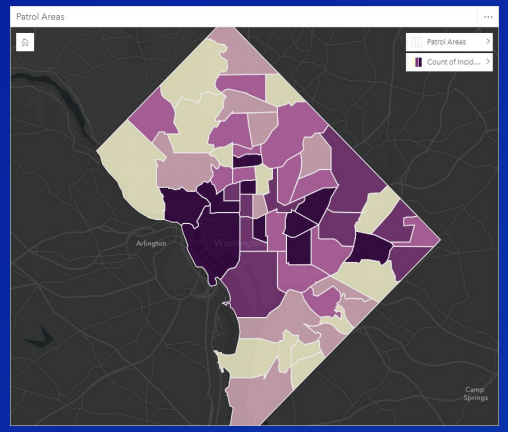

A treemap shows both the hierarchical data as a proportion of a whole and, the structure of data. The proportion of categories can easily be compared by their size.

Acknowledgement
Inspired by work by Jon Schwabish and Severino Ribecca, The Graphic Continuum, 2014 and, Alan Smith et al. Visual Vocabulary, The Financial Times, 2016

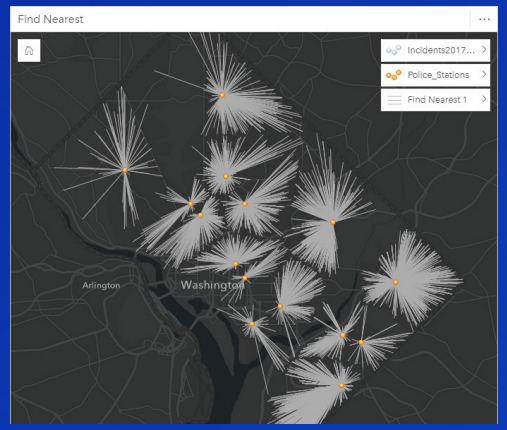
esri

Linda Beale PhD, 2017

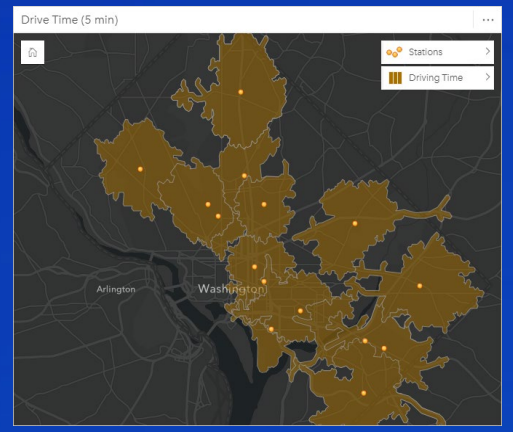
Spatial Analysis



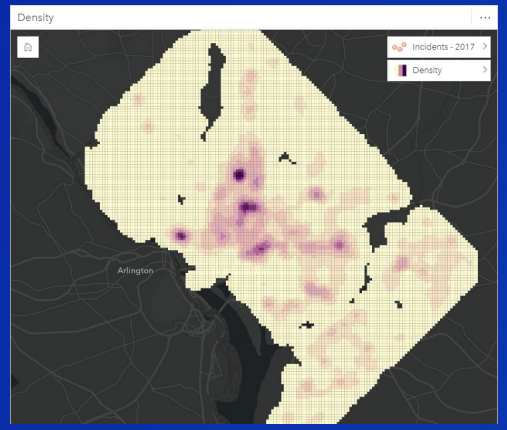
Aggregate



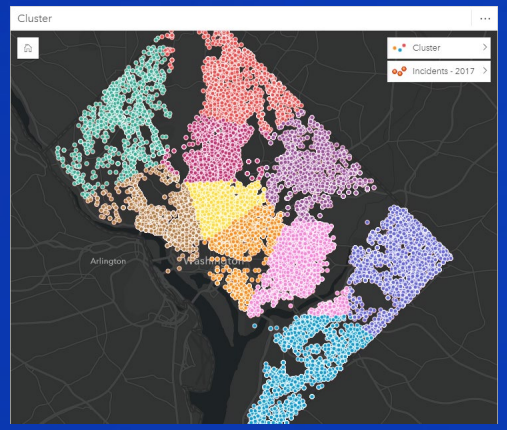
Find Nearest



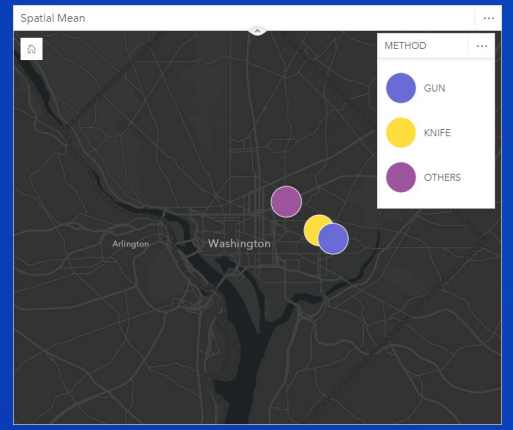
Buffer & Drive Time



Density

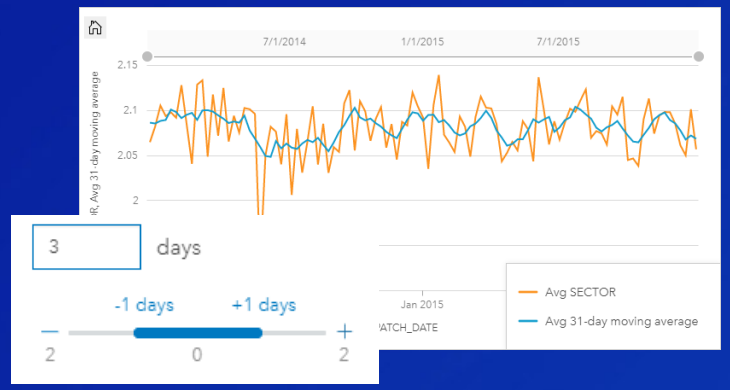


Clustering



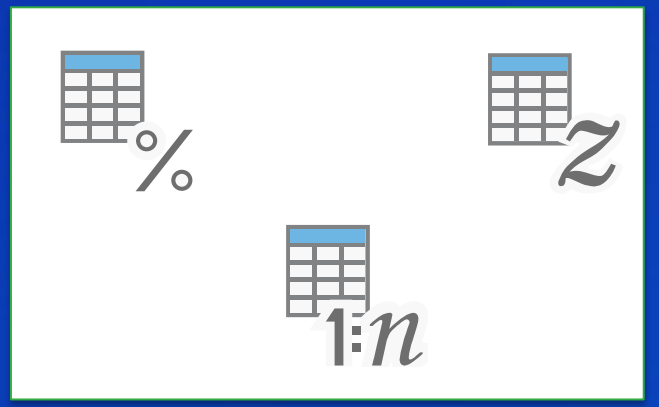
Spatial Mean

Time Series & Statistical Analysis

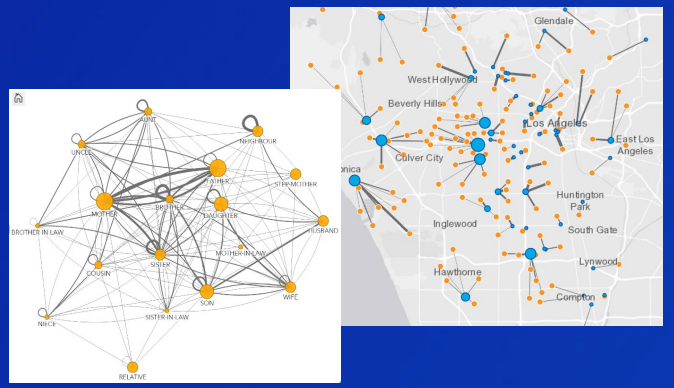


Moving Average

Temporal Decomposition



Percent Change, Ratio, and Z-Score

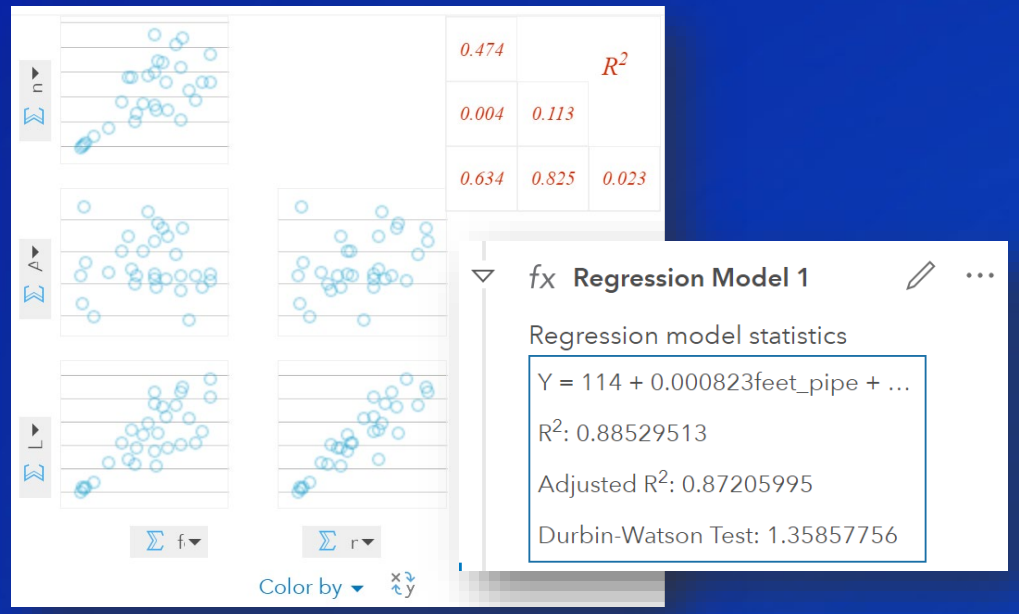


Link (Graph)

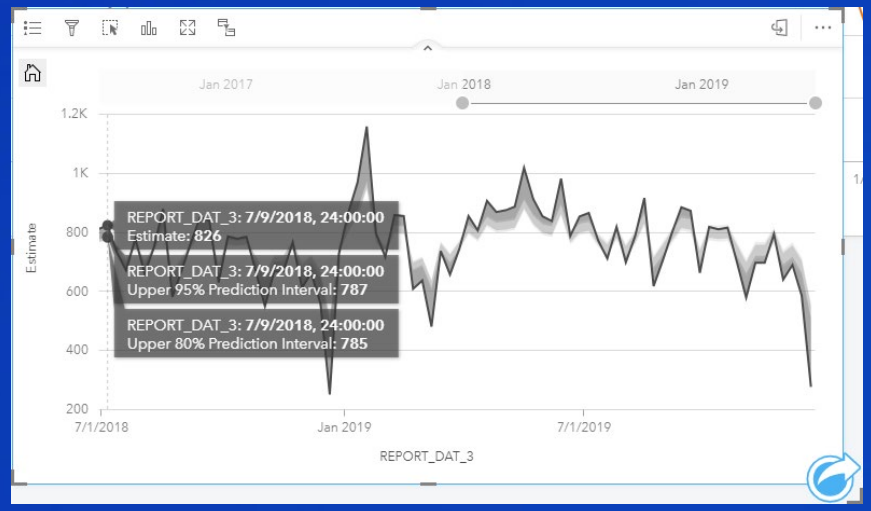
$$y_i=\beta_0+\beta_1x_1+\beta_2x_2+...+\beta_nx_n+\varepsilon$$

Regression

Predict & Forecast



Predict



Forecast

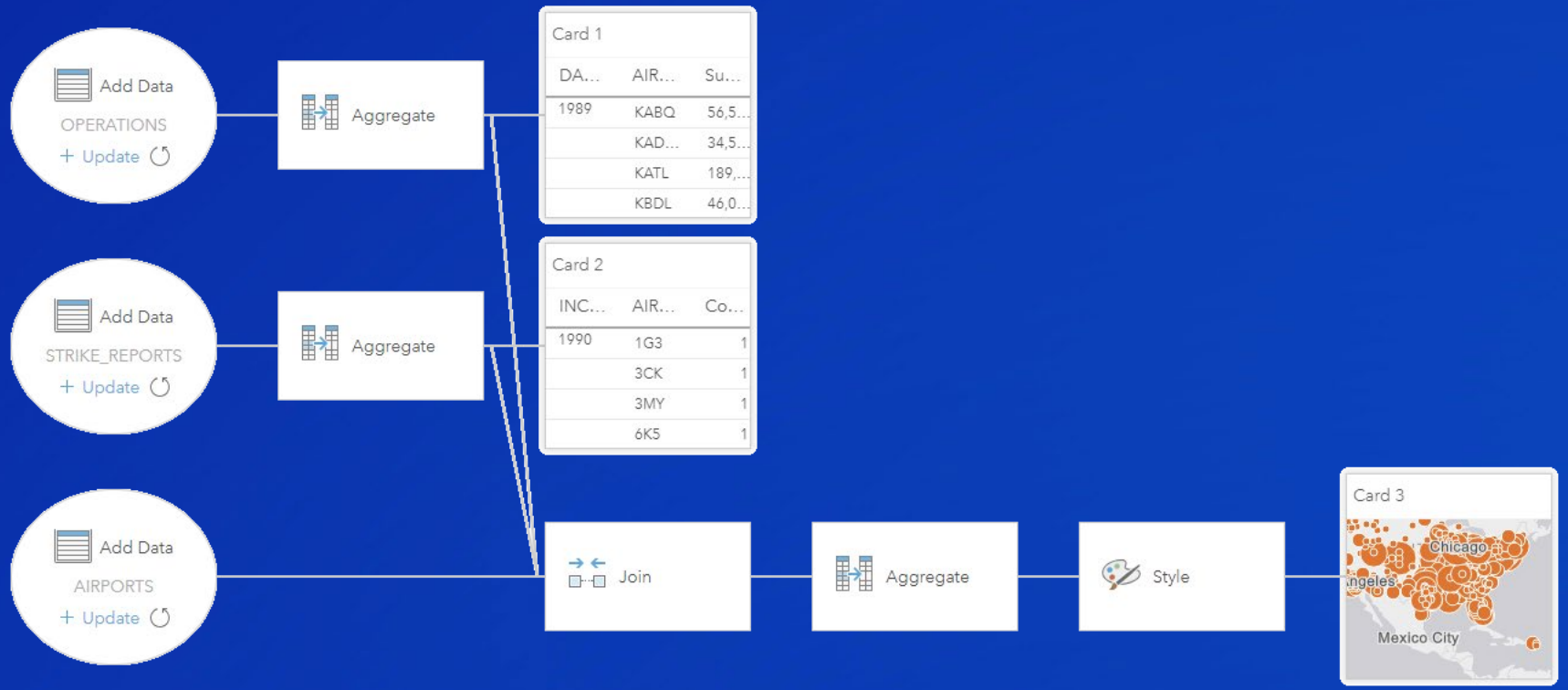
Data Science with Python and R

(Enterprise or Desktop)

- Access any library (including ArcGIS API for Python)
- Pass data and charts between Insights and Python / R
- Embed scripts within the Insights model

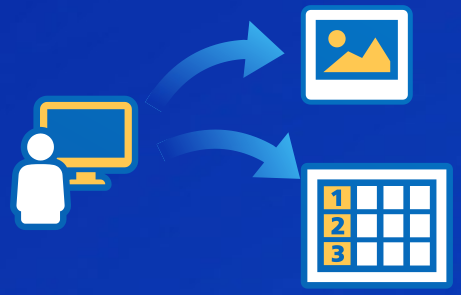
Analytic Models

Documented and Repeatable

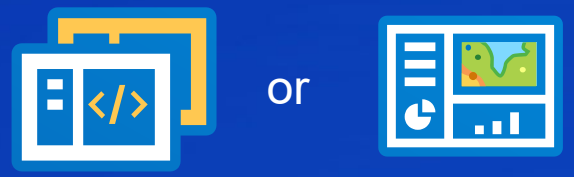


Share Compelling Interactive Reports to Viewers

Schedule analysis refresh



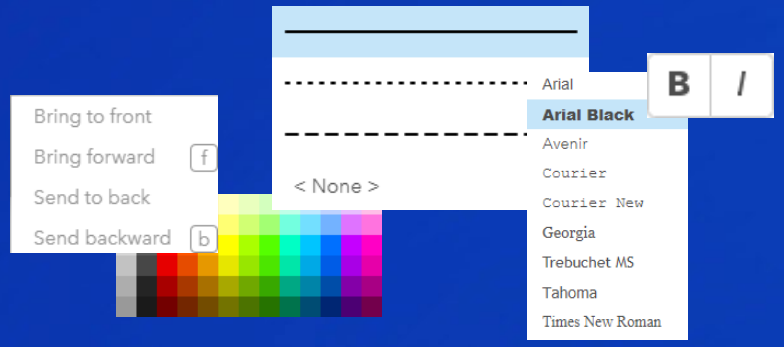
Viewers can export images & data



Embed or Self-contained

- Text
- Hyperlink
- Image
- Video

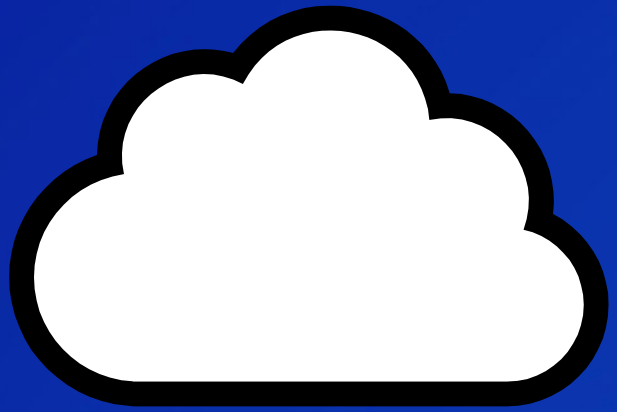
Context and Storytelling



Brand with colors, borders, font, and more

Share models and workbooks among analysts

Deployment Options



SaaS

Your Infrastructure

Desktop

Your Potential Evolution of Location Analytics

Initial Setup & Training

- Free 21-day trial
- Choose your deployment option: SaaS, hosted, or desktop
- Install software or log-in Online
- Follow training and get familiar with the capabilities

Quick Win Project

- Make your data connections
- Prep data, visualize it, analyze it, and create compelling interactive report
- Share report publicly or share internally with viewer logins required
- Get feedback and iterate
- Executive awareness

Organizational Awareness

- Gather need for additional projects
- Solidify viewer access (anonymous or login)
- Solidify data connections
- Utilize scheduled update of analysis
- Socialize value of location within analytics
- Identify analyst and share models / themes

Resources

Resources, Discovery Paths, and Documentation

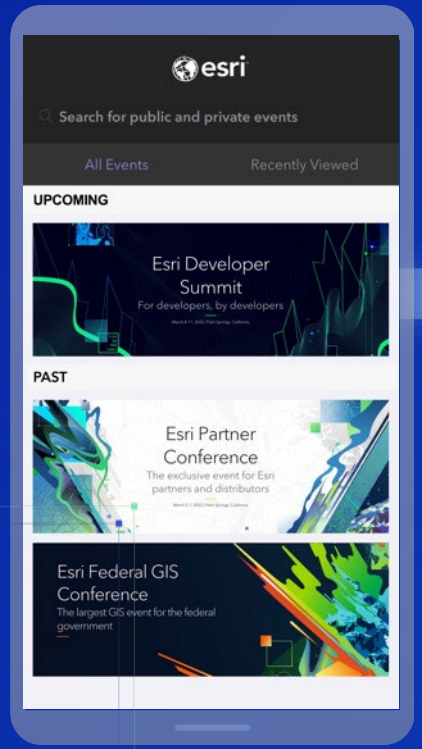
Resources

Videos

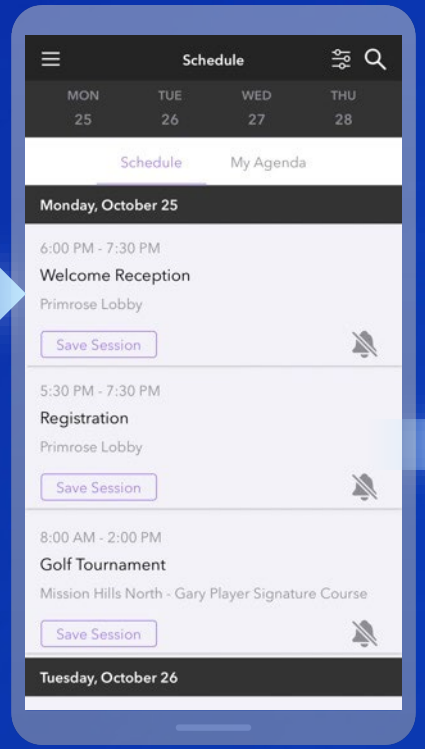
Discussion

Please Share Your Feedback in the App

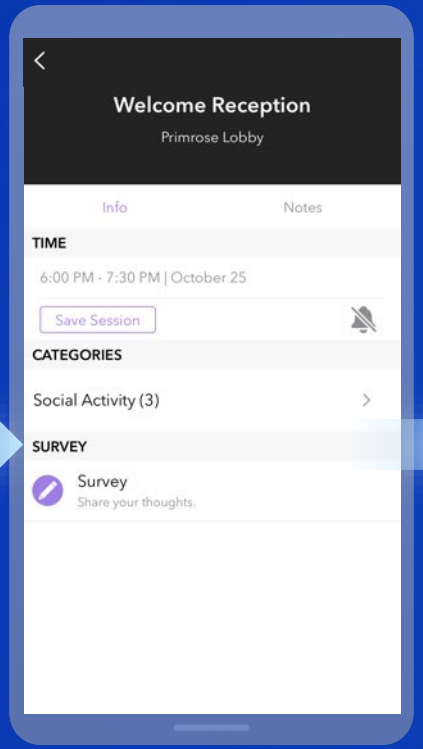
Download the Esri Events app and find your event



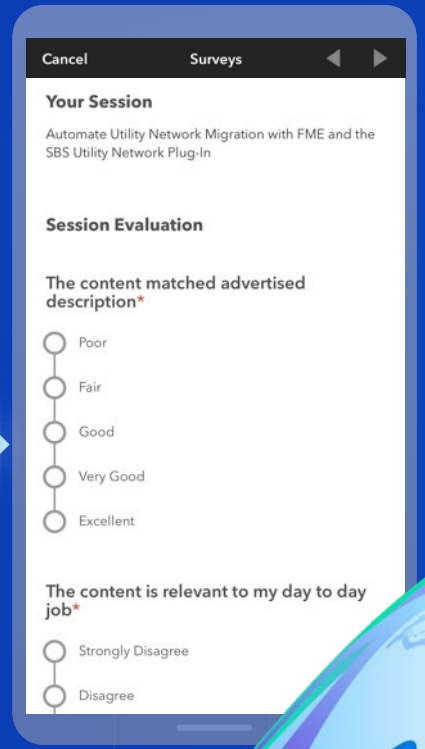
Select the session you attended



Scroll down to “Survey”



Log in to access the survey



ArcGIS Insights

Thank you.