



Batch Geocoding with ArcGIS

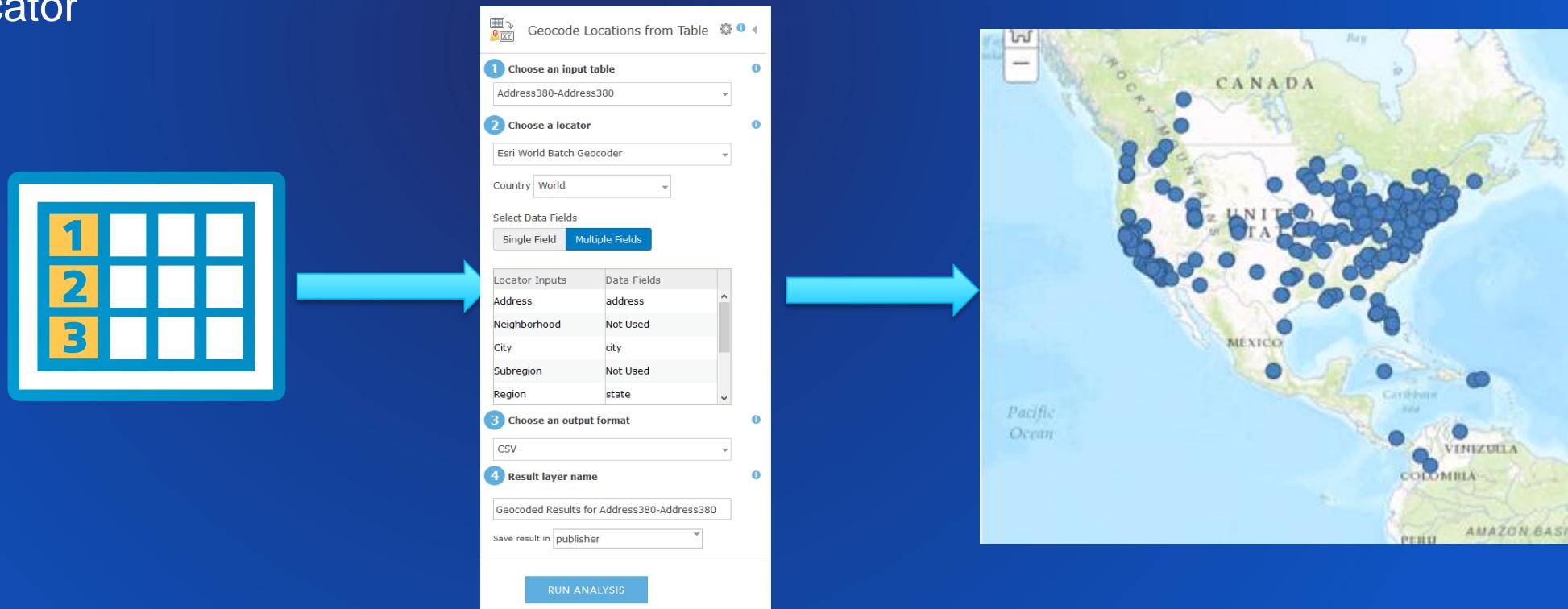
Victor Bhattacharyya

SEE
WHAT
OTHERS
CAN'T

Goal: Turn a spreadsheet of addresses and place names into points on the map using ArcGIS

What is Batch Geocoding?

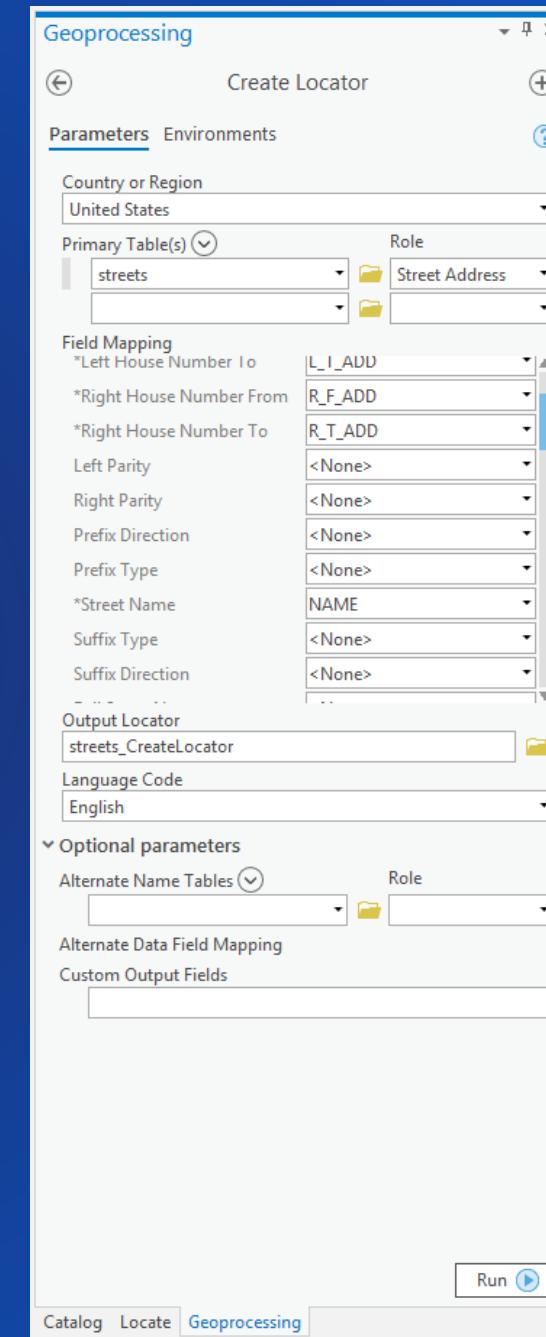
- Turns a spreadsheet of addresses into points on the map
- Requires:
 - Your spreadsheet or table
 - An ArcGIS Application such as ArcGIS Pro or Map Viewer
 - And a locator



Locator options

Batch Geocoding Overview

- Use Esri-provided locators
 - World Geocoding Service
 - World Geocoder for ArcGIS
 - Street Map Premium locators
- Build your own locators using the CreateLocator tool in ArcGIS Pro



Where can I do Batch Geocoding?

- ArcGIS Online & Enterprise Map Viewer
- ArcGIS Pro
- Custom Applications via API's and SDK's



Where can I do Batch Geocoding?

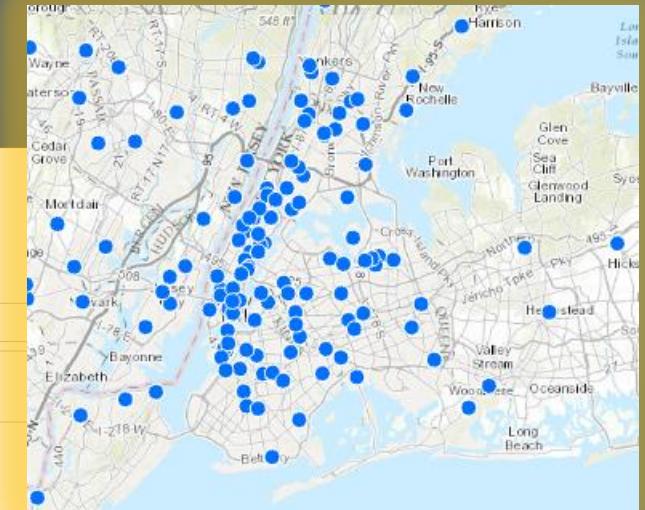
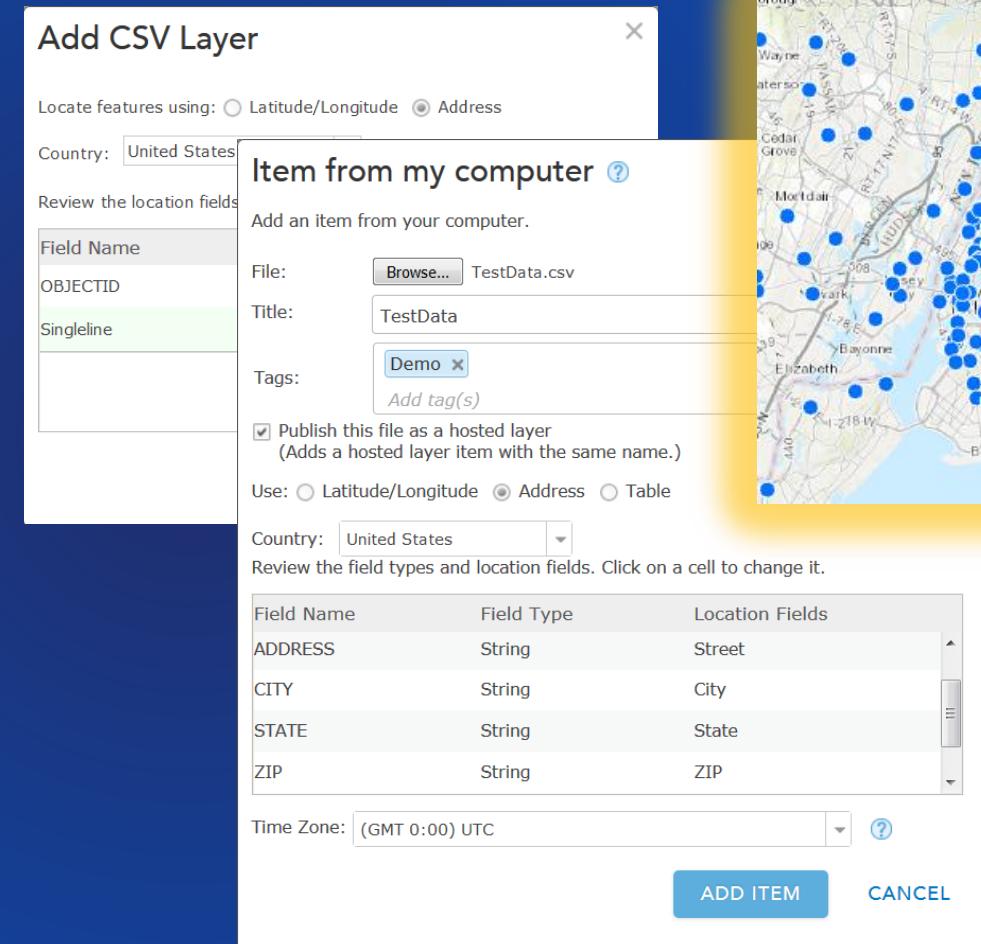
- ArcGIS Online & Enterprise Map Viewer
- ArcGIS Pro
- Custom Applications via API's and SDK's



ArcGIS Online Map Viewer

Batch Geocoding

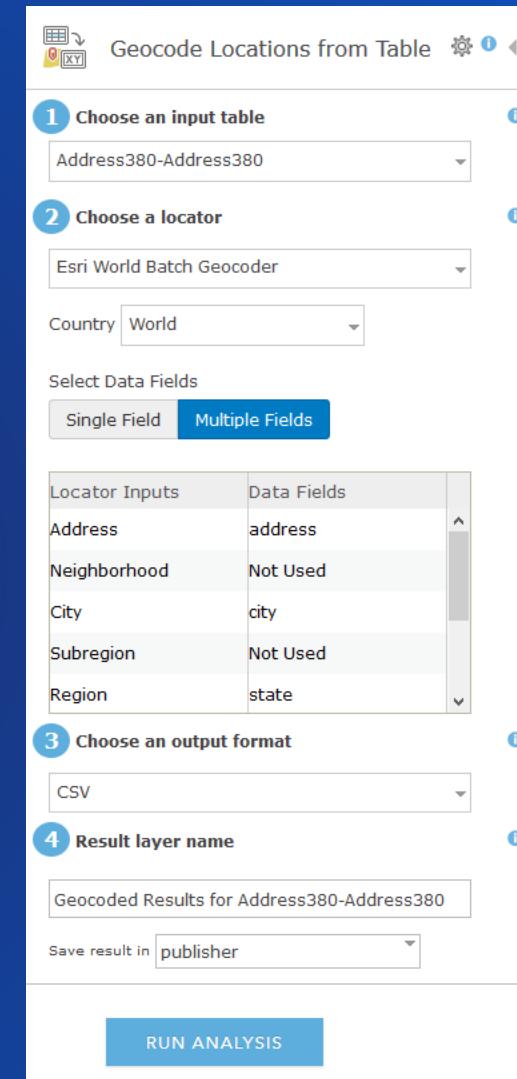
- Drag & Drop
 - Adds CSV layer to Web Map
 - Limited to 1000 Features
 - 250 anonymously
- Upload CSV as an Item
 - Creates a feature layer
 - Unlimited feature count

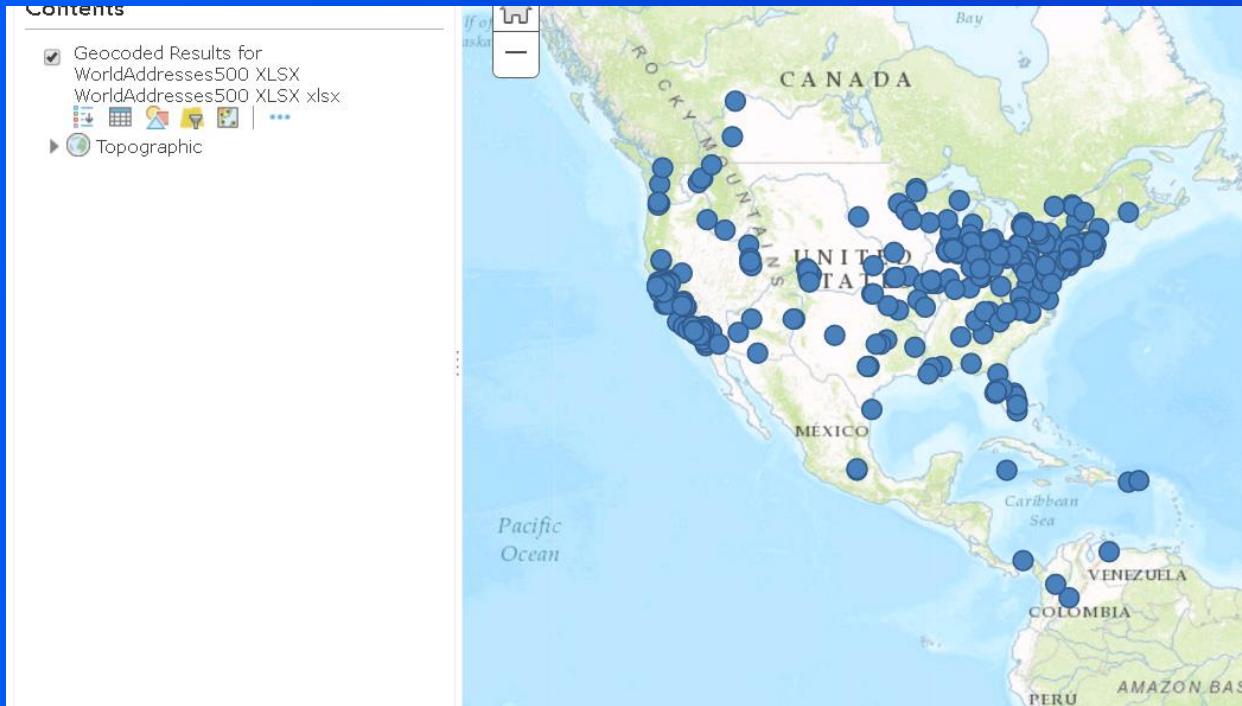


ArcGIS Enterprise Map Viewer

Geocode Locations from Table

- Supports multiple Portal item input formats
 - CSV, XLSX, Portal table
- Geocoding jobs run asynchronously in the background
 - Optimized for performance
 - Behind your own firewall
- Supports multiple output formats and writes geocoding results to the portal
 - CSV, XLS, Feature Layer





Batch Geocoding in the Map Viewer



Where can I do Batch Geocoding?

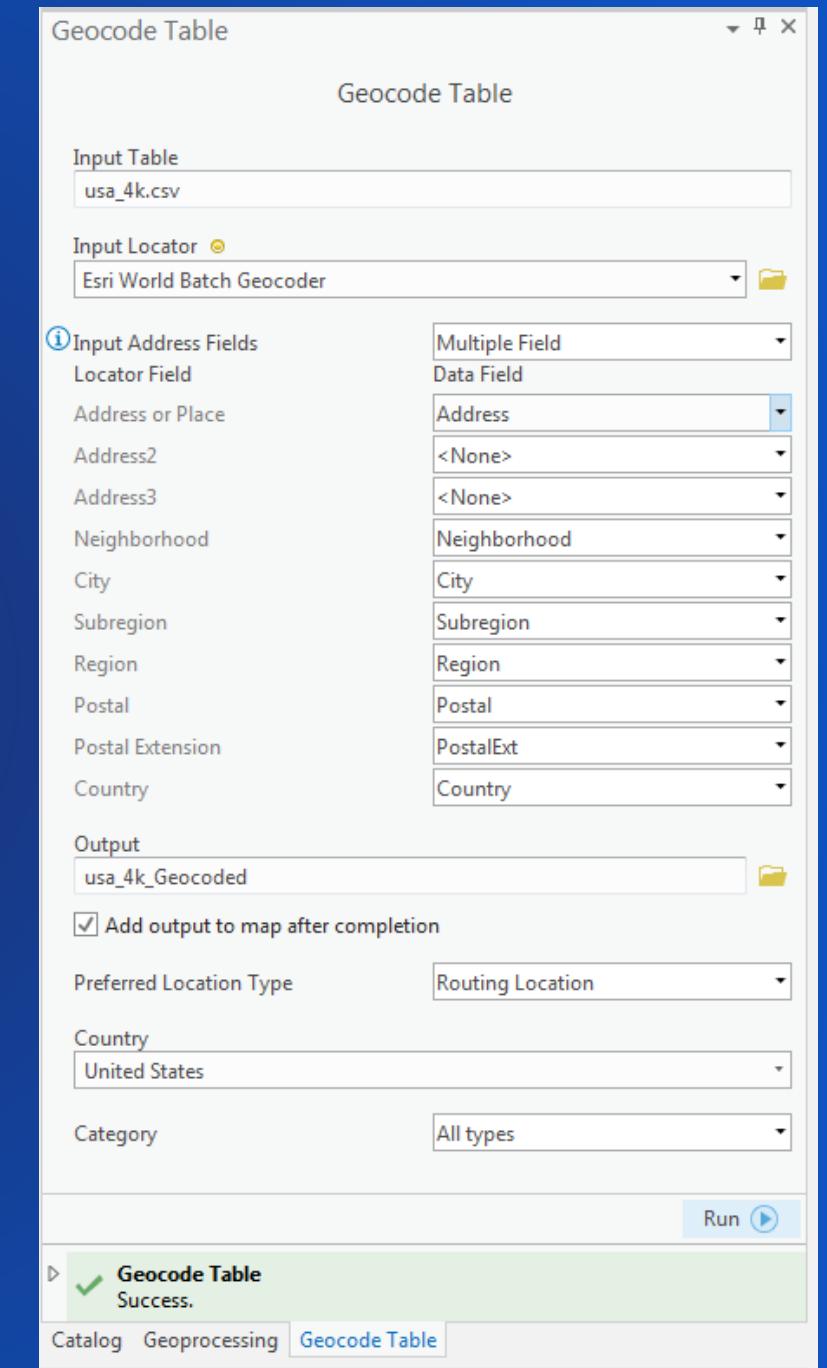
- ArcGIS Online & Enterprise Map Viewer
- ArcGIS Pro
- Custom Applications via API's and SDK's



Geocode Table

ArcGIS Pro

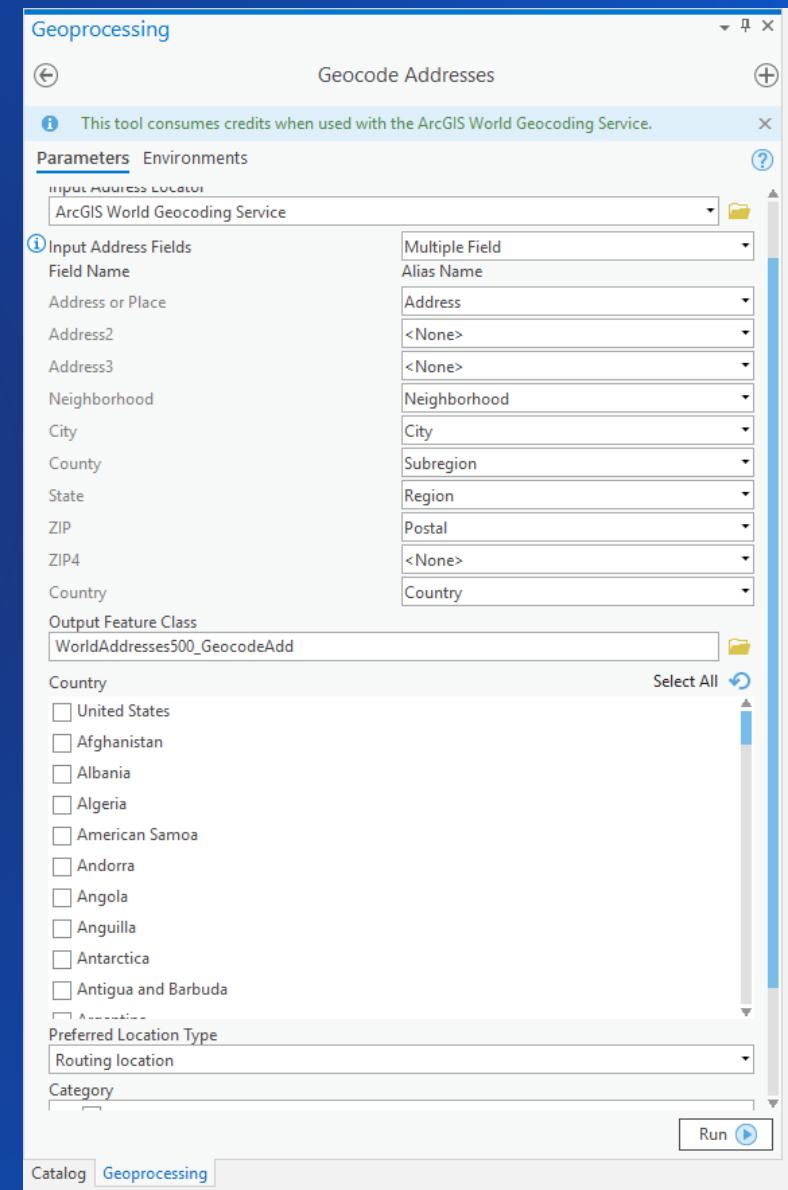
- Guided workflow steps you through batch geocoding
- More batch geocoding options
 - Location Type
 - Category filtering
 - Country filtering
- Works with local locators and Portal geocoding services (including the World Geocoding Service)



Automating Batch Geocoding: Geocode Addresses

ArcGIS Pro

- Automate Geocoding on Desktop using Geoprocessing
- Run a GeocodeAddresses job and right-click “Copy Python command” to get started
- Jobs can be scheduled and used in ModelBuilder



Automating Batch Geocoding: Geocode Addresses

Best practices for local geocoding

- Run Geocode Addresses GP Tool in ArcGIS Pro
- Right-click -> “Copy Python command”
- Paste into your favorite IDE

```
import arcpy

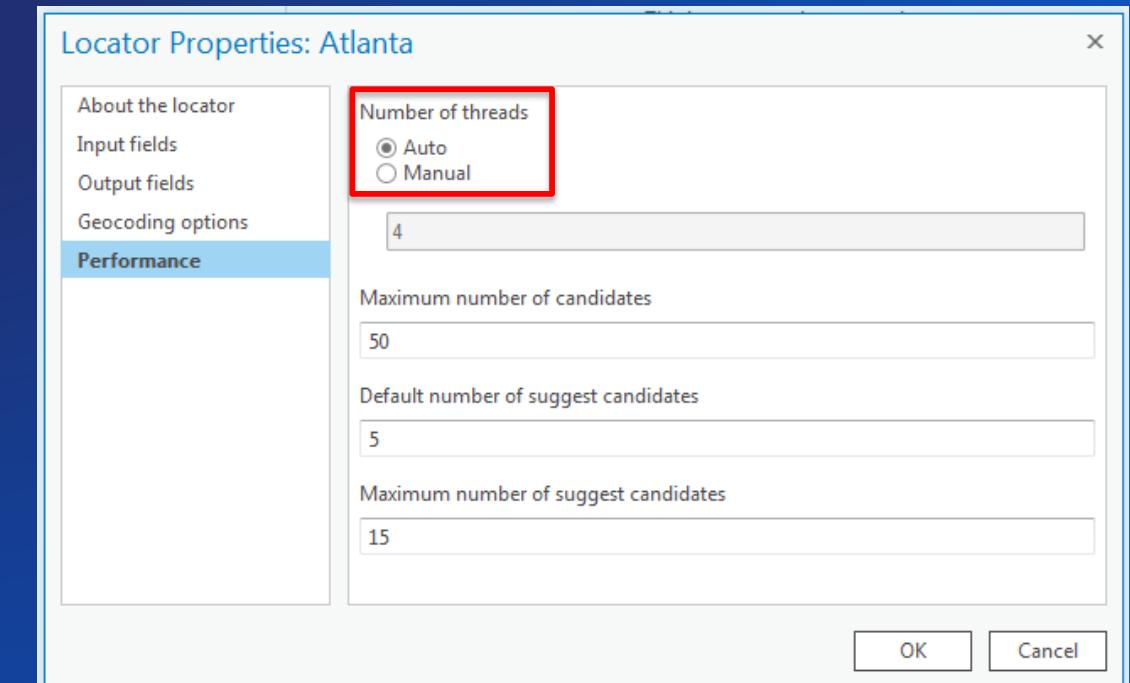
table = r"C:\data\WorldAddresses500.csv"
locator = r"C:\data2\USA_SMP"
field_mapping = "Address or Place' Address VISIBLE NONE;Address2 <None> VISIBLE NONE;Address3 <None> VISIBLE NONE;Neighborhood Neighborhood VISIBLE NONE;City City VISIBLE NONE;State State VISIBLE NONE;Country Country VISIBLE NONE"
output_location = r"C:\data2\outputs.gdb\World_output"
country = None
rooftop = "ROUTING_LOCATION"
category = None

arcpy.geocoding.GeocodeAddresses(table, locator, field_mapping, output_location, country, rooftop, category)
```

Desktop Geocoding Recommendations

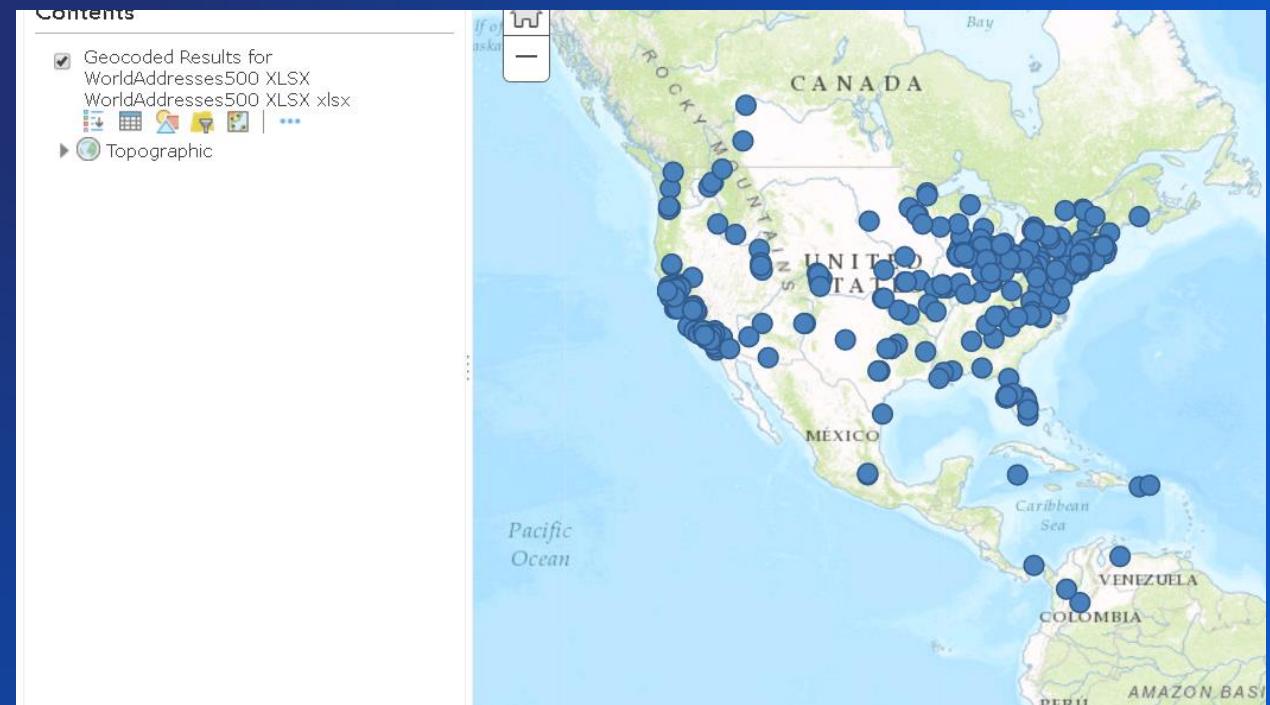
Best practices for local geocoding

- Use the latest version of ArcGIS Pro (2.4)
- Use new locators
 - Newest StreetMap Premium locators or locators built with the CreateLocator tool in ArcGIS Pro 2.4
- Set the number of threads on your locator to “Auto”
 - This uses 1 less than the number of cores on your machine
- Put the locator and input table on a solid state drive



For even more info about Performance...

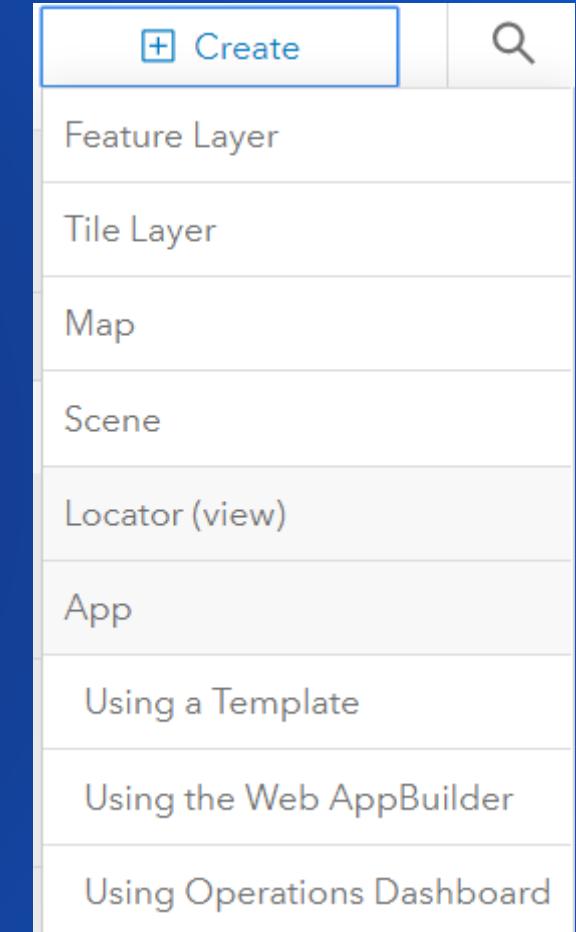
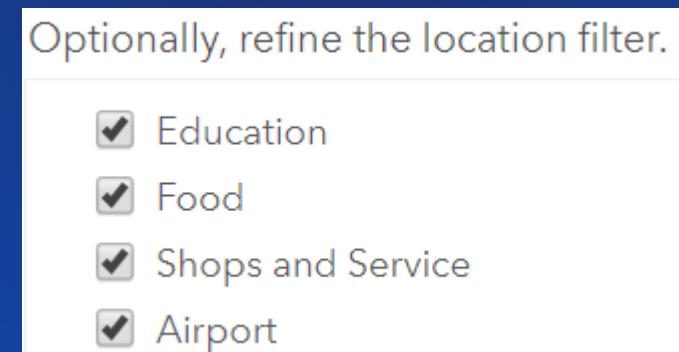
- Come to my talk!
- **High Performance Batch Geocoding**
 - 12:15pm-1pm Today in Demo Theater 11
- If you have millions of records, you'll want to swing by

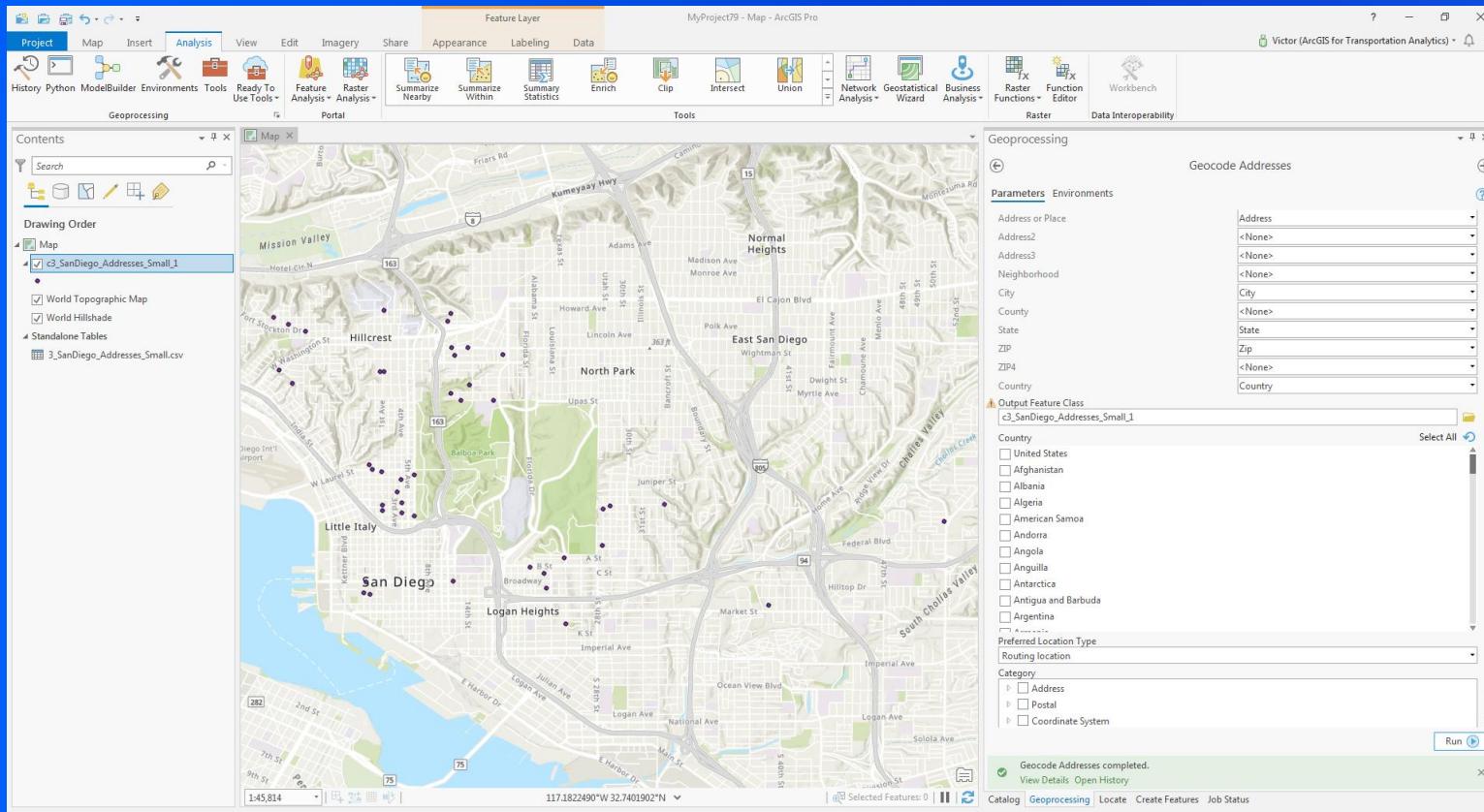


Locator Views of the World Geocoding Service: Filter Results

What's New

- Filter results...
 - By country
 - By category
 - By extent
- Filter applies for...
 - Find
 - Suggest
 - Batch





Batch Geocoding in ArcGIS Pro: Locator Views, Categories, Rematch & more!

Where can I do Batch Geocoding?

- ArcGIS Online & Enterprise Map Viewer
- ArcGIS Pro
- Custom Applications via API's and SDK's



Batch Geocoding in Custom Applications: GeocodeAddresses API

A REST endpoint for Batch Geocoding

- Each REST request geocodes 150 to 1000 records at a time
- Demands input and output of JSON
- Requires a token for secure services
- Requires credits when geocoding against the World Geocoding Service



For more info:

<https://developers.arcgis.com/rest/geocode/api-reference/geocoding-geocode-addresses.htm>

GeocodeAddresses API: A Closer Look

Custom Applications via API's & SDK's

- Synchronous API
- Tips & Tricks
 - Chunk up your addresses into batches of 1000
 - Retry failed requests with a smaller batch size
- Optional parameters to filter results
 - category
 - sourceCountry
 - locationType

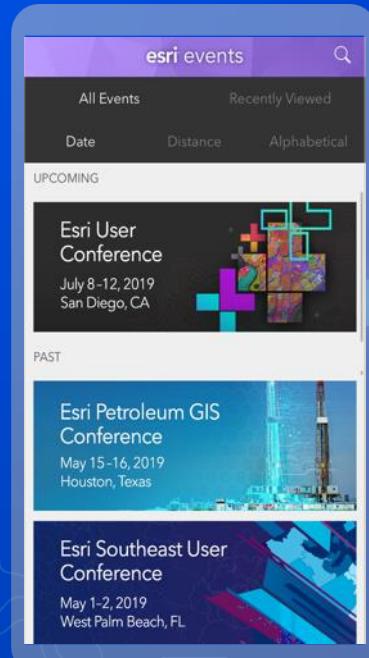
```
addresses=
{
  "records": [
    {
      "attributes": {
        "OBJECTID": 1,
        "Address": "380 New York St",
        "Neighborhood": "",
        "City": "Redlands",
        "Subregion": "",
        "Region": "CA"
      }
    },
    {
      "attributes": {
        "OBJECTID": 2,
        "Address": "1 World Way",
        "Neighborhood": "",
        "City": "Los Angeles",
        "Subregion": "",
        "Region": "CA"
      }
    }
  ]
}
```

For more info:

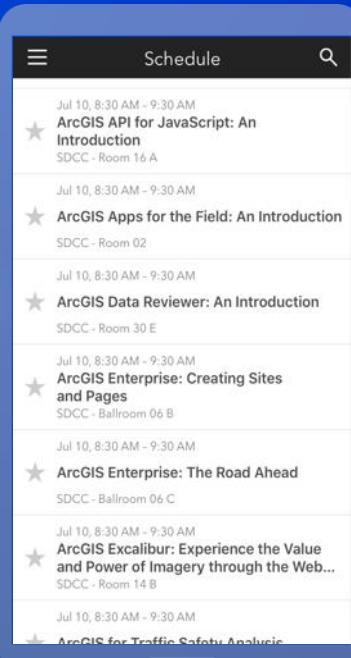
<https://developers.arcgis.com/rest/geocode/api-reference/geocoding-geocode-addresses.htm>

Please Share Your Feedback in the App

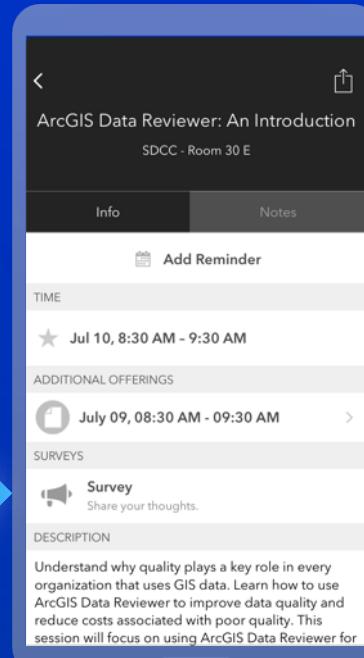
Download the Esri Events app and find your event



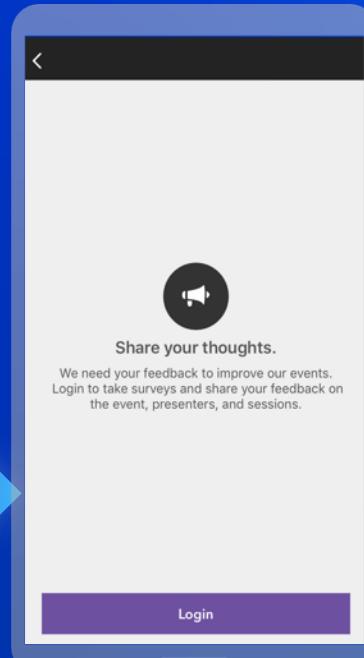
Select the session you attended



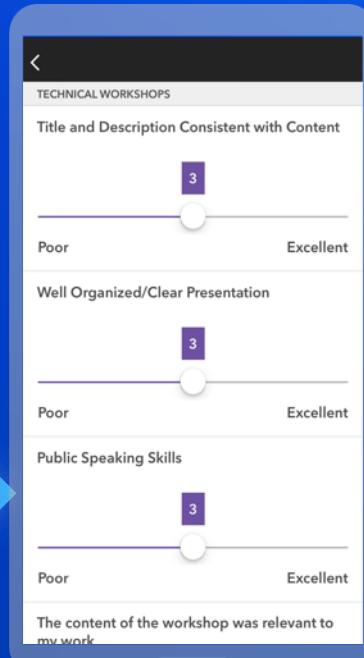
Scroll down to "Survey"



Log in to access the survey



Complete the survey and select "Submit"



Questions?

