

## **Tutorial: Augmented Reality GIS with AuGeo**

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This lab serves as a simple demonstration of how augmented reality can be applied to the field of GIS. You will be using AuGeo, a mobile app developed by Esri Labs that is able to overlay point data information onto the surrounding environment through the use of cellphone cameras. By loading the necessary data into your ArcGIS online account and then syncing the app with the account, you will hopefully become a bit more familiar with the university campus by the end of this lab.

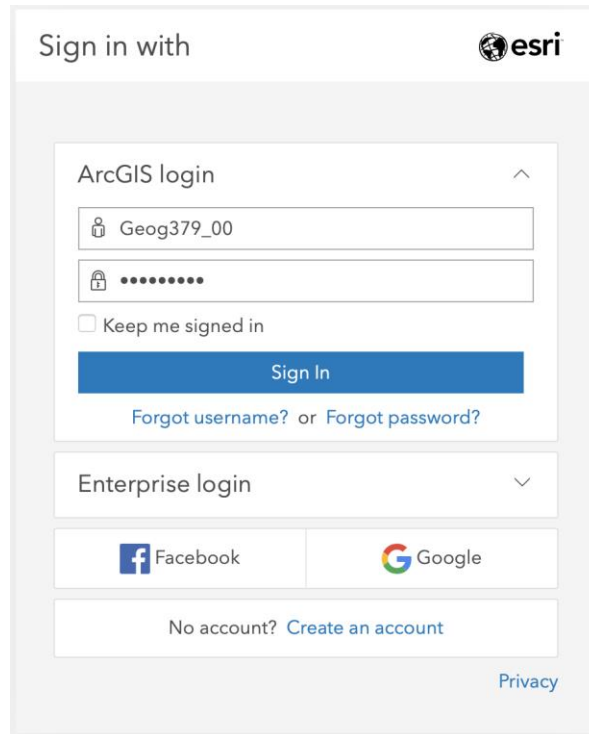
### **Basic requirements:**

- You will create your own virtual information displays about the buildings around the Main Quad of UIUC and visual them through augmented reality using AuGeo

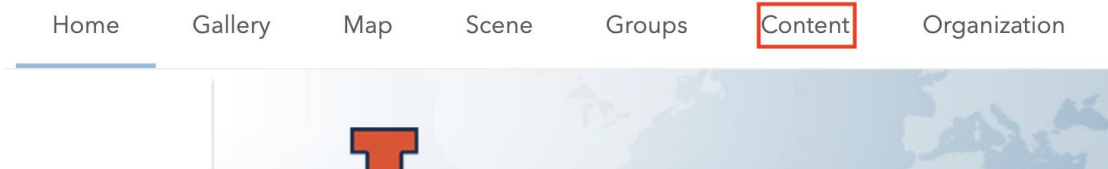
### **Step 1: Preparing the Data in ArcGIS online**

In order for AuGeo to properly function, it is important to first prepare the geospatial data in your ArcGIS online account.

1. You need to log into ArcGIS Online website <https://www.arcgis.com/>, click “Sign In” and use your ArcGIS Online username and password (created for this course).



2. After signing in, click the “Content” tab on the top of the page. This will bring you to the “My Content” page, where you will be able to manage the different items within your account.



3. Click the “Add Item” button to the top left of the page, and then click “From your computer” in the drop-down menu. After that, click the “Choose File” button on the pop-up window. You should be able to select the UIUC\_Quad\_Buildings.xlsx file from your computer, which you can download from the course website: <https://learn.illinois.edu>. After the file is chosen, add a tag of your choice under “Tags” (e.g. UIUC\_Campus), and then click “Add Item” on the pop-up window to add the Excel sheet to your contents.

## Content

↑ Add Item

+ Create

🔍 Search



### From your computer

Publish a layer from a file; upload a document or image.



### From a URL

Link to a layer or document on the web.

## Add an item from my computer



File:

Choose File

no file selected

Title:

Enter a title for this item

Tags:

Add tags

Add Item

Cancel

## Add an item from my computer



File:

Choose File

UIUC\_Quad\_Buildings.xlsx

Title:

UIUC\_Quad\_Buildings

Tags:

UIUC\_Campus X

Add tags

☒ Publish this file as a hosted layer. (Adds a hosted layer item with the same name.)

Locate features by:

☒ Coordinates ☐ Addresses or Places ☐ None, add as table

## Add an item from my computer



Add tags

☒ Publish this file as a hosted layer. (Adds a hosted layer item with the same name.)

Locate features by:

☒ Coordinates ☐ Addresses or Places ☐ None, add as table

Review the location fields. Click on a cell to change it.

Field Name	Location Fields
Building_Name	Not used
Address	Not used
Latitude	Latitude

Time Zone: (UTC) Coordinated Universal Time



Add Item

Cancel

4. On the following page, which displays the details of the point feature layer generated from the imported data, click the “Create View Layer” button to the right of the page. In the pop-up window, enter a title for the new layer (e.g. UIUC\_Quad\_Buildings\_AR), and add the tag “AuGeo” under “Tags” (this is important, since only feature view layers tagged with “AuGeo” can be used by the AuGeo app). Afterwards, click “OK” to complete the generation process.

UIUC\_Quad\_Buildings

OverviewDataVisualizationUsageSettings

Edit Thumbnail

Add to Favorites

Add a brief summary about the item.

Feature Layer (hosted) by Geog379\_48

Created: May 19, 2020 Updated: May 19, 2020 View Count: 0

Description

Add an in-depth description of the item.

Layers

Edit

Open in Map Viewer

Open in Scene Viewer

Publish

Create View Layer

Export Data

Update Data

Share

Edit

## Create View Layer



Create a new view of this feature layer that references the same data, yet allows you to independently set how it's shared with others, how it's drawn, what features are displayed (filtering) and whether it can be edited.

Title:

UIUC\_Quad\_Buildings\_AR

Tags:

UIUC\_Campus X

AuGeo X

Add tags

Summary: (Optional)

Enter a summary

Save in folder:

OK

Cancel

5. On the next page, which displays the details of the view layer, click on the “Visualization” tab towards the top right of the page. Then, click on the “Configure pop-up” button to the left of the page. Delete the entries under “Pop-up Title”, then click the “+” button to the right and select “Building\_Name{Building\_Name}”. Under “Pop-up Contents”, choose “A description from one field, and then choose Address{Address}. Click “OK” to submit the changes, and then click the “Save Layer” button on the top right corner of the page.

☒ Show Pop-ups

**Pop-up Title**

**Pop-up Contents**

Display: A description from one

Address {Address}

**Configure Attributes**

**Attribute Expressions**

Adding expressions allows you to create new information from existing fields for use in pop-ups.

ADD

No expressions.  
Click 'Add' to add one.

Building\_Name {Building\_Name}  
Address {Address}  
Latitude {Latitude}  
Longitude {Longitude}

Parking Structure, Lot C-10  
E Daniel St  
Library and Information Science Bldg  
Speech and Hearing Science  
S 5th St  
International Studies Building  
S 6th St  
E Chalmers St

☒ Show Pop-ups

**Pop-up Title**

**Pop-up Contents**  
 Display: A description from one field ▼  
Address {Address} ▼

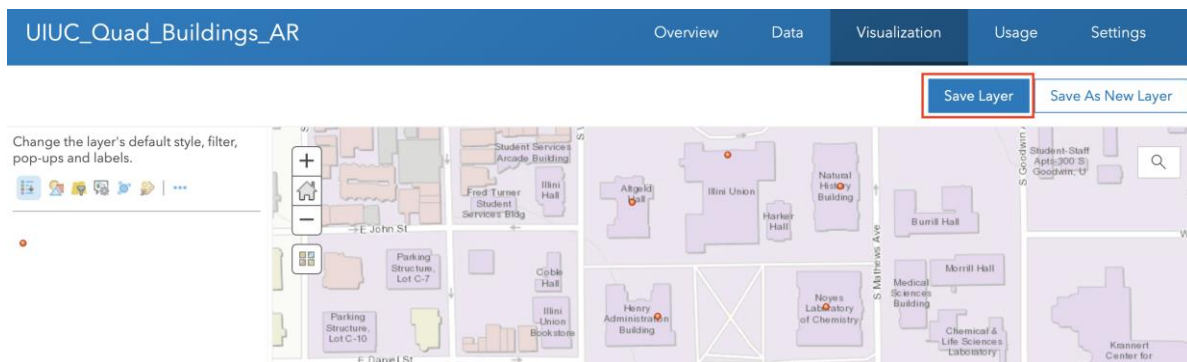
[Configure Attributes](#)

**Attribute Expressions**  
 Adding expressions allows you to create new information from existing fields for use in pop-ups.

ADD

No expressions.  
Click 'Add' to add one.

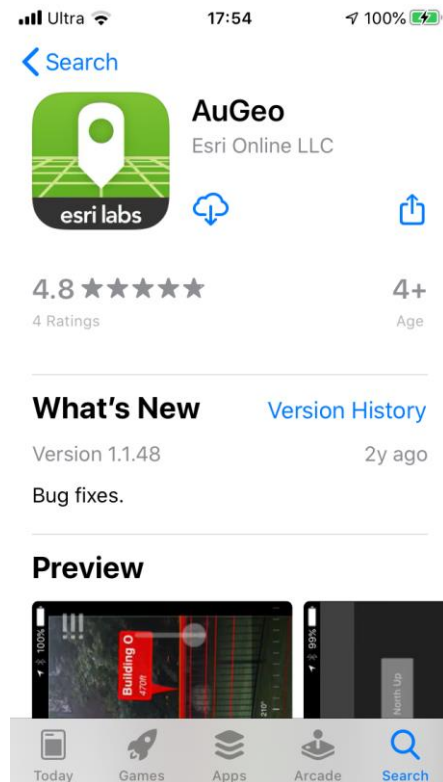
OK CANCEL



## Step 2: Accessing the Data on AuGeo App

Once you have successfully prepared the data, it is time to link them with the AuGeo app and visualize them in the real world.

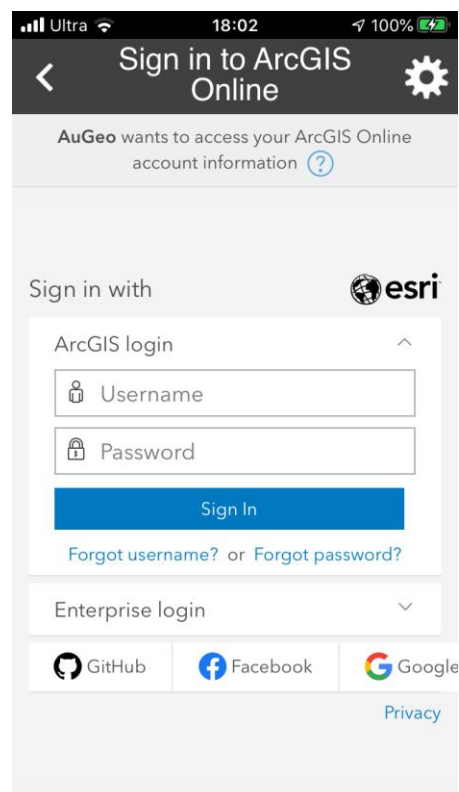
1. Download the AuGeo app to your mobile phone.



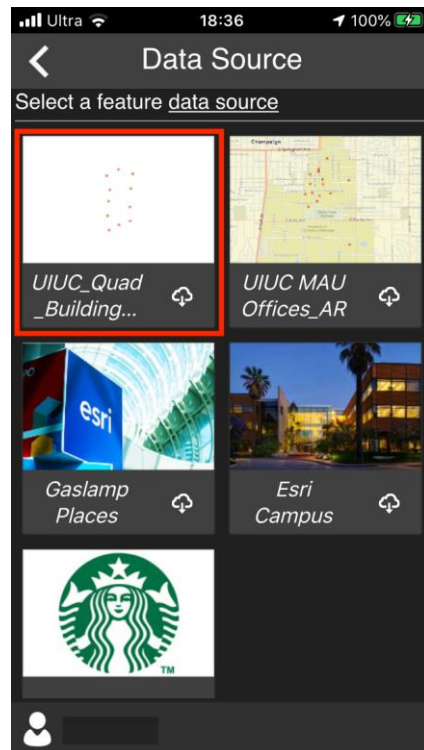
2. Open the app. Allow the app to access your location as well as the phone's camera, and tap on “Start anyway” on the bottom right of the page.



3. On the next page, tap on the “Sign in to get more data sources” button, and enter your ArcGIS Online username and password (created for this course) on the following page.



4. After logging in, tap on the icon with the name “UIUC\_Quad\_Buildings\_AR” on the screen.



5. Once the map opens, zoom to the area around the Quad, and tap on the “Refresh Data” button on the button right of the screen.



6. After the data points appear on the map, tap the back button on the top left corner of the screen. If you hold your mobile phone vertically, you should be able to see pop-ups appearing on the screen, and if you tap on one of them, you should be able to see the name of the building, its address, and its distance from your current location. Feel free to walk around the Quad and explore the pop-ups of each of the buildings if you have time. Happy AR-ing!

