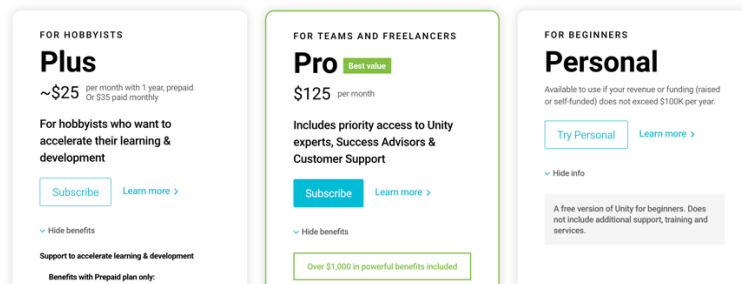


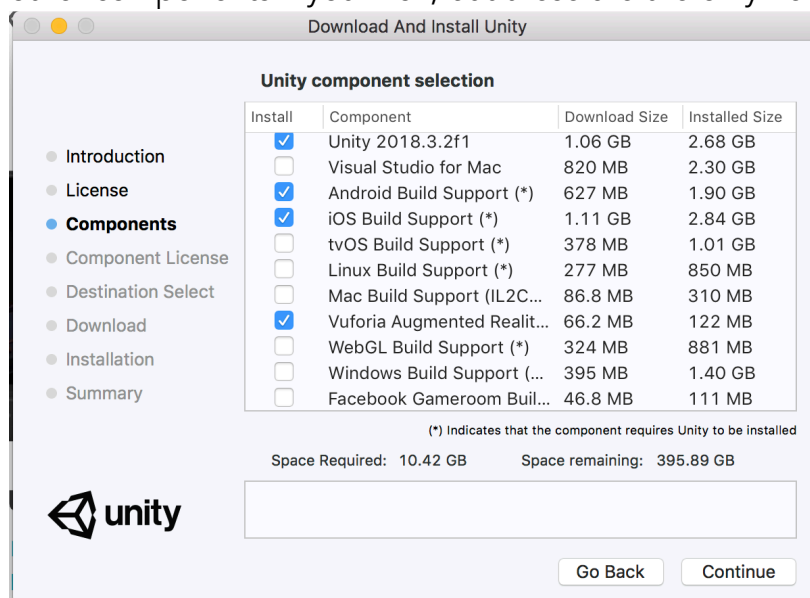
# STEP 1: Download Unity

In order to download the Unity Editor, you need to create an account. There are three levels of Unity membership. For hobbyists, artists, and educators, The free version is satisfactory. To download:

1. Visit <https://store.unity.com/>
2. Select the "Personal" version on the right side of the screen by clicking the "Try Personal" button.



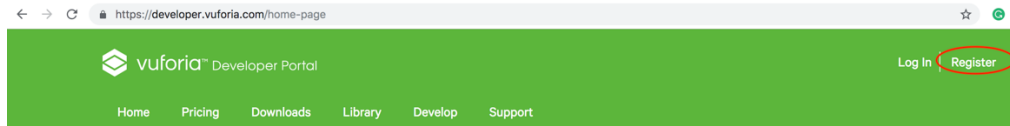
3. Agree to the terms and download the appropriate version according to your operating system.
4. Open the installer, and run "Unity Download Assistant."
5. Go through the essential installation steps. When you get to the "Components" Menu, select "Unity 2018.3.2.f1," "Android Build Support," "iOS Build Support," and "Vuforia Augmented Reality." You may install other components if you wish, but these are the only necessary ones.



6. Finish installation.

# STEP 2: Vuforia Registration

1. Visit <https://developer.vuforia.com>.
2. Click the “register” icon in the upper right corner.

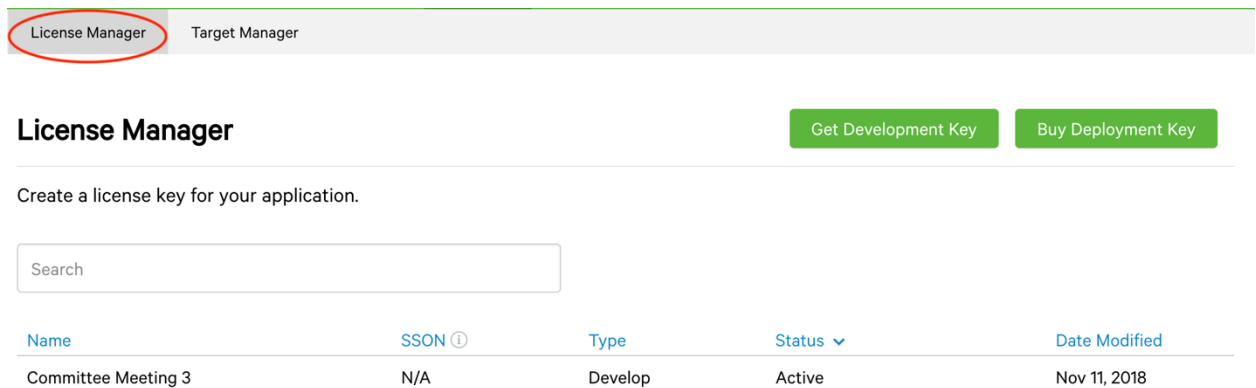


Jan 09, 2019

## Vuforia Engine 8.0 is Available!

A new year ushers in new opportunity and growth. Vuforia Engine is no exception in 2019 and is proud to offer the community one of its most innovative releases to date, one that will open dynamic possibilities for Augmented Reality. Vuforia Engine 8.0 will deliver the following functionality and enhancements:

3. Create a profile. The free option works great!
4. Log in. There are two pain purposes for this portal. The first is the “License Manager” that will allow the Vuforia plugin in to function correctly in the Unity space. The second is to configure “Image Targets” on which our augmented content will display. We’ll start with the “License Manager” side.



5. Click the “Get Development Key” button on the upper right side of the page.
6. Select a title for your key, such as “Unity AR Demo.” You should see it in your list of licenses. We’ll come back to this later!
7. Now, we’ll move to the “Target Manager” side. Click the “Target Manager” link in the upper left corner. Select “Create Database.”

## Create Database

Name:

Type:

- Device  
 Cloud  
 VuMark

Cancel

Create

8. Title your Image Target database, and select "Device" as the type.
9. You should see your database in the list now. Click its link to add content. You should see this page now:

**UnityAR\_Demo** [Edit Name](#)

Type: Device

Targets (0)

Add Target

Download Database (All)

Target Name

Type

Rating

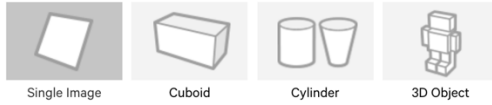
Status ▾

Date Modified

10. Now we'll add our Image Target to the Database. We're going to use the Goucher Logo for our demonstration, but this could be nearly anything. I have used street signs, photographs, concrete, woodgrain patterns, text, etc. Begin by pressing the "Add Target" button.
11. Select an image from your files using the "browse" button. Set the "width" to 1, and fill out a name. Press "Add." Example:

### Add Target

Type:



File:

.jpg or .png (max file 2mb)

Width:

Enter the width of your target in scene units. The size of the target should be on the same scale as your augmented virtual content. Vuforia uses meters as the default unit scale. The target's height will be calculated when you upload your image.

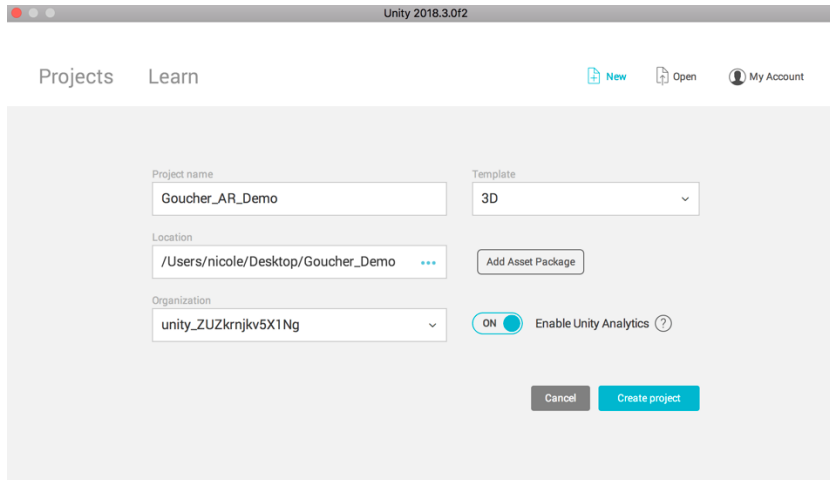
Name:

Name must be unique to a database. When a target is detected in your application, this will be reported in the API.

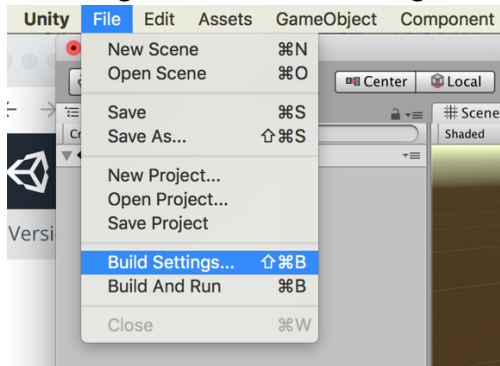
12. Download your database by clicking the button in the upper right corner of the Target Manager page (pictured above). We're using the Unity Editor, so select that option as your development platform. Keep your web browser open, so that we can quickly access your Vuforia Developer Portal easily later on.

## STEP 3: Configure the Unity Space

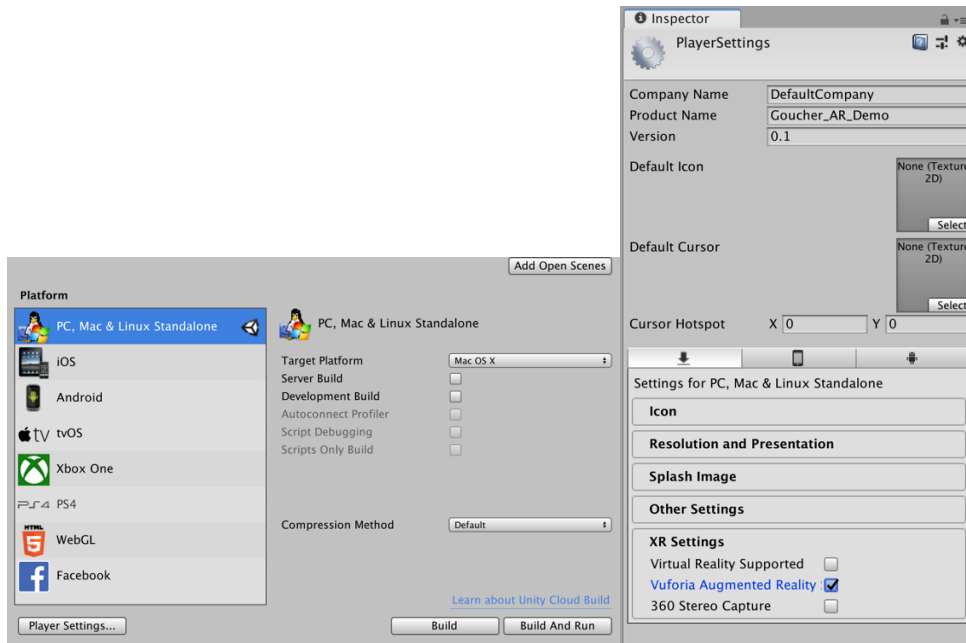
1. Create a Project Folder on your desktop. Title it "Unity\_AR\_Demo."
2. Drag and drop the image database you just downloaded from Vuforia into your new folder.
3. Open Unity by signing in with the account you created in Step 1.
4. Create a new project. Give it a name, and direct the location to the Project Folder you just created. Be sure you keep the "3D" template.



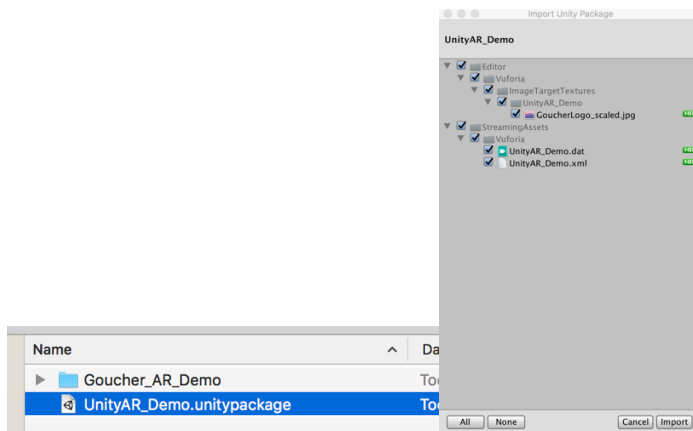
5. Look at the column to the left of the window, titled "Sample Scene." This is where all of the components to your AR application, called "Game Objects" will be listed. This is the most direct way to see what is going on in your scene. The center display is a visual representation of the Game Objects in the Sample Scene column. The "Inspector" column to the right allows you to edit and modify game objects.
6. Delete the "Main Camera" and "Directional Light" objects from the "Sample Scene" column on the left by left-clicking (two fingers on Mac) and selecting "Delete" from the menu.
7. Before we can use Vuforia Game Objects, we need to activate it. Do so by selecting File -> Build Settings.



8. A window will open. Select "player settings" at the bottom left, which will open up options in the "Inspector" column on the right. Under "XR Settings" at the bottom of the list, check "Vuforia Augmented Reality." Exit out of the Build Settings window.

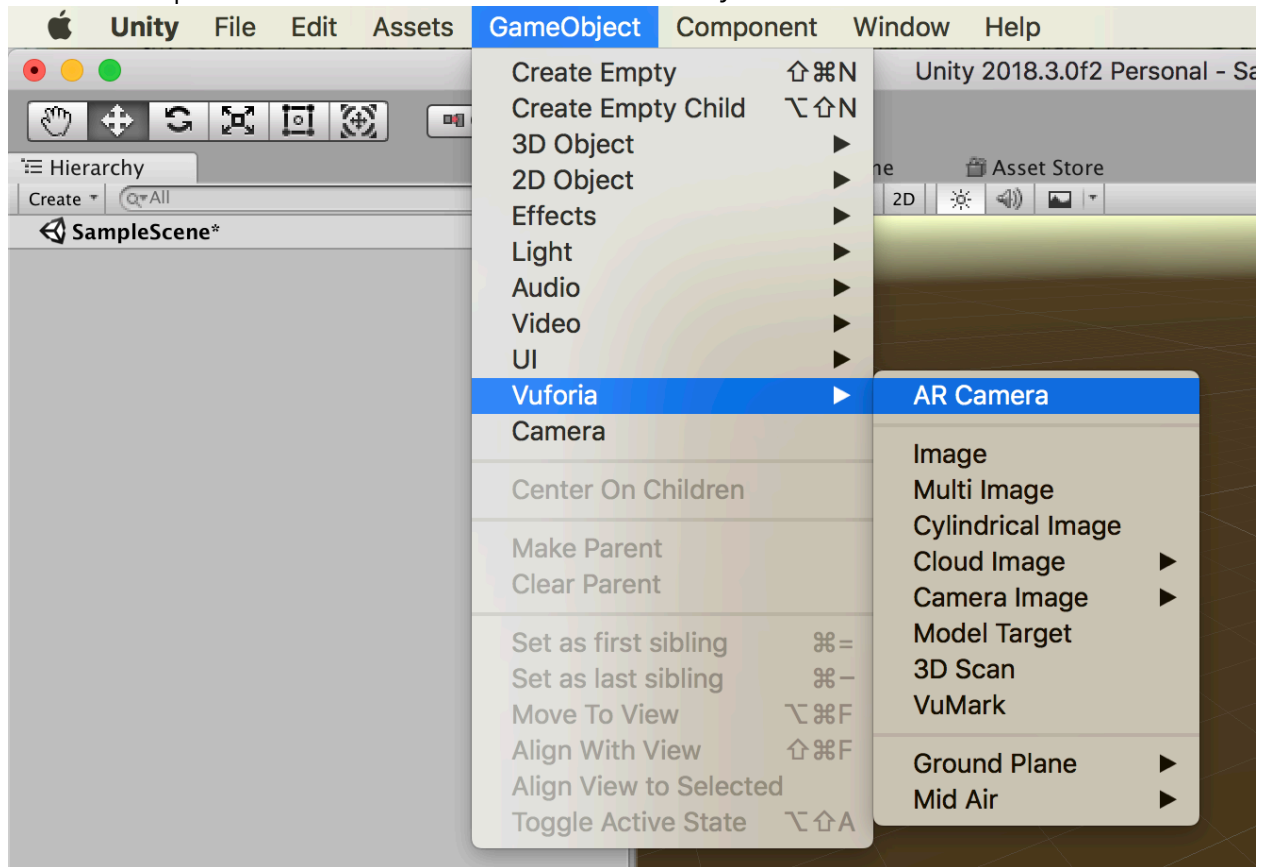


- Next, we're going to add your image target database. Open a Finder window and open the Image Target Database you downloaded and placed in your project folder. It will open a window in Unity, and ask you to select which components you would like to import. Leave all selected, and then press "Import."



- Insert an "AR Camera" and an "Image Target" by selecting "Game Object -> Vuforia -> AR Camera" and "GameObject -> Vuforia -> Image. You may be

asked to import additional Vuforia assets. Select “yes.”



11. Select the “AR Camera” so that it is highlighted. Notice its preferences pop up in the “Inspector” column to the right. We need to use the Inspector to configure the AR Camera with the License we created in the Vuforia Developer portal. Scroll down to the bottom, and click the “Open Vuforia Configuration” button.
12. We’re going to add the license you created at the beginning of the workshop to the camera. Copy it from your Vuforia developer portal in your web browser (Command+C).

### License Manager

Create a license key for your application.

Search

Name	SSON
Unity AR Demo	N/A

### Unity AR Demo

Edit Name Delete License Key

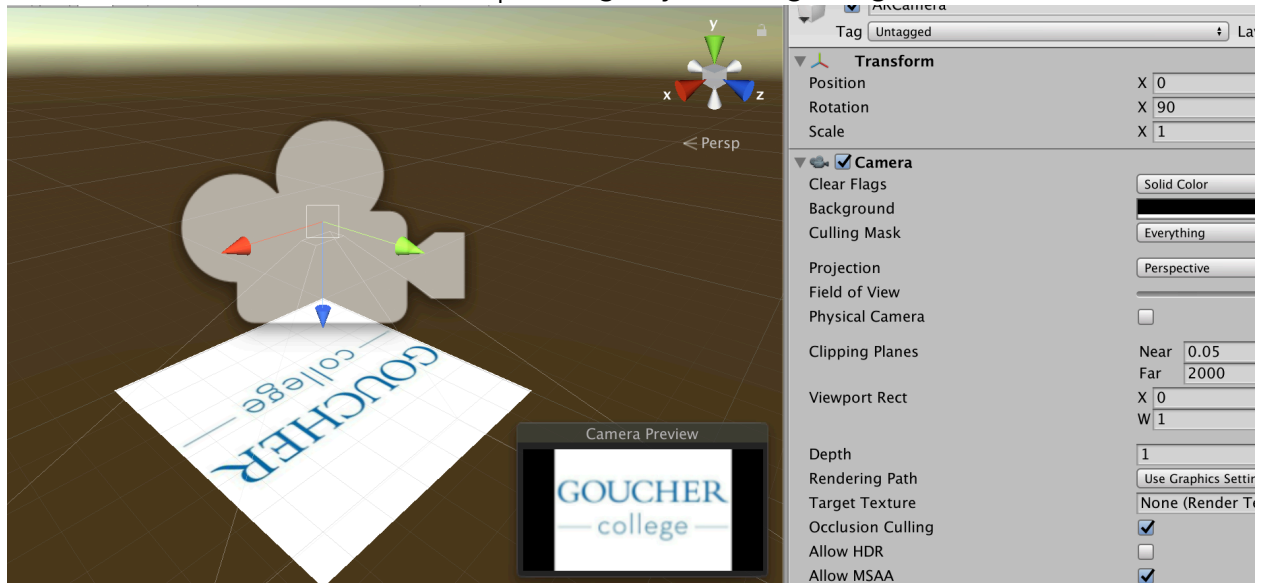
License Key Usage

Please copy the license key below into your app

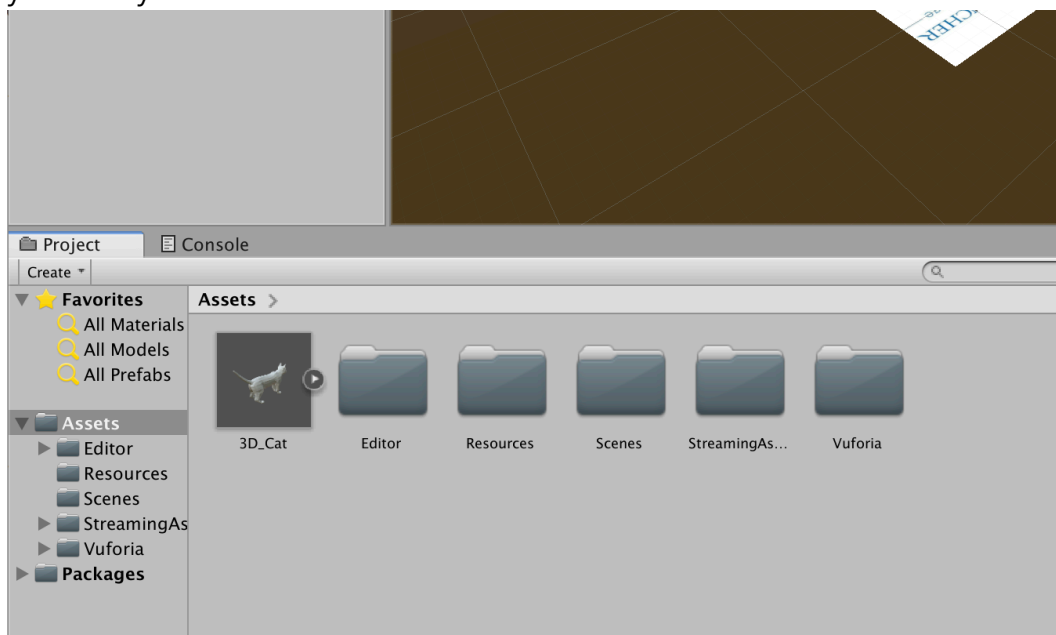
```
AVxoy8H/////AAABmaikIUC580zXqto6S9u9LF4cBHsdhOawLK3F
RGXbC2122im3a1bFA4mdzj54NygyBFQwvcBJrvAe/r8R75zI2rRK
wd5+7wOolRqQBo51BCuWpCJ1jWoLucIDjIO0N75xVgDN1iqRIes6
W/j5QbnSstGuGawB1hg7gh+EzeAJgj8VEoKb883EWMQ2zzw100SX
ghi16Aun9NgWGUvHE7om2U9PPuqYsSrV6nsTNOycvdmxy1TDE0XU
TaMIpbxovBtzMEE95UCTuaBSQdI6CwHP1PcBRdDnXgZ/p55N11Qg
TJQsXKtkHHF003/J//at7gypNDng+MTnRDKWvz3GRMIjORTTtpCX
qZc8Ay+nbzJv/Gxj
```

13. Paste the license into the “App License Key” box in the inspector.
14. Now, we need to point it at your image target. Click the camera icon in the center of the screen. Grab the green arrow at the top of the camera, and pull it

upwards with your mouse. In the Inspector, rotate the camera 90 degrees on the x axis. You should see the camera pointing at your image target now.



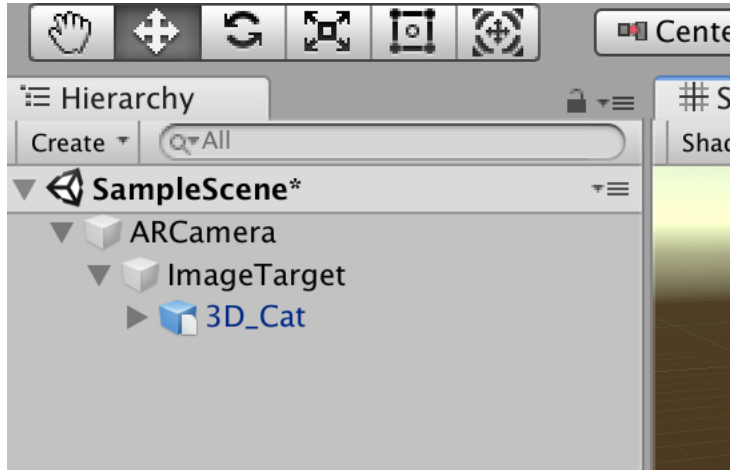
15. Select a 3D object you would like to use from the demo files. I've decided to use the 3D cat. Download it, put it in your project file, and then drag & drop it into your Unity "Assets."



16. Drag the cat into your SampleScene column on the left. You should have three game objects now – an AR Camera, Image Target, and 3D cat.
17. Arrange the game objects into a hierarchy by grabbing the "3D\_Cat" Game Object with your cursor (in the left column), and placing it over the "Image



Target” object. Then, grab the “image target” and place it on the “AR Camera.” It should look like this:



18. Press the Play button in the top center portion of your screen. Hold a printed version of the logo in front of the camera, and your cat will appear!

NOTE\*\*\* You may change the orientation of the cat by selecting it, and then editing its Position, Rotation, and Scale in the inspector panel.

From Unity, you may export your application for Android or iOS devices. iOS devices require an Apple Developer license (\$100/year) to export a stable application. Apple ID accounts without a Developer License may export 5 beta applications, but each will stop functioning after 5 days. See these beginner tutorials for help:

For Android:

<https://www.youtube.com/watch?v=AxsY2DuSfnw>

For iOS:

<https://www.youtube.com/watch?v=dwjziS3Jjmk>