XR MOOC Specialization Course 3: Developing XR Applications with WebXR, Unity, & Unreal
Dr. Michael Nebeling

Assignment 3: AR Scene

Great to see your VR scenes! Only two more steps before we can conclude our XR project: we will create and share a 3D scene for feedback and then submit our work for peer review in the last assignment. In this third honors track assignment, your task is to create a AR scene in WebXR with A-Frame, Unity, or Unreal using the following steps:

1. **Add AR module/plug-in to 3D scene & view in AR**
2. **Adapt the 3D scene for AR (marker-based/marker-less)**
3. **Make it blend more with the environment (light, sound)**
4. **Optional: Make 3D objects interactable (fuse, tap, drag, etc.)**
5. **Optional: Try another approach (marker-based/marker-less)**

Expected results

- Better sense of scale and perspective in AR
- Create AR experience in layers (fore-/mid-/background)
- Support interactions for marker-based/marker-less AR

Submission

Please submit the following information and supplementary materials (as PDF document, PNG image, MP4 video) to the AR Scenes Gallery:

Title: Choose a descriptive title based on your idea. This text will appear as the title of the submission in the gallery.

Category: Choose the category of AR experiences that best fits your scene: marker- based AR scenes require a fiducial marker; marker-less AR require ARKit/ARCore capable smartphones or tablets or an AR headset like Microsoft HoloLens.

Platform: Choose the XR platform (WebXR, Unity, Unreal) you have used to create the AR scene.

Summary of Key Interactions & Reflection:

- **Key Interactions**: Summarize your ideas for the AR scene. Describe what the key explicit/implicit interactions are in the scene including the support for object manipulation (optional) and marker-based vs. marker-less AR (optional).
- **Reflection:** Reflect on the development process with your chosen platform and toolkits. What was easy/hard? Where did you get stuck?
- **Questions**: Ask for feedback or advice. You should indicate whether you are done or if you are looking for help from others. In either case, it's important you ask specific questions about your solution / problem.

(continued on the next page)

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Attachments:

- **Screenshot of 3D scene:** Submit a screenshot of your 3D scene (or VR scene if that was your starting point). This is important as it provides a reference both for you and for other learners that are asked to provide feedback on your work.
- **Screenshot(s) of AR scene and key interaction**: Submit up to two screenshots of your new AR scene that illustrate a key interaction.
- **(optional) Screenshot of optional interactions**: If you implemented support for the optional components, object manipulation and marker-based vs. marker-less AR, try to show that.
- **(optional) Screenshot of tool**: Optionally, you can show how you used your chosen platform and toolkits, which can be helpful if you're looking for help.
- **(optional) Demo video**: Optionally, submit a short narrated screen capture of the AR experience from the first person, so with you previewing your scene in 3D or running it on an AR device. **Try to stay below two (2) minutes; the total upload limit is 50 MB.**