CAP 6110: Augmented Reality Engineering

Homework 2

Due Sunday, February 14, 2021 by 11:59pm
(10 points)

Purpose

Learn how to design and implement an AR application with visual coherence.

Directions

1. Create a Unity 2019.4.17f1 (LTS) project and add Vuforia 9.6.4.

2. Create a new scene in the project and save it as "Homework 2" under "Assets" > "Scenes".

3. **Create an AR application with at least two tracked targets with associated phantoms and at least one tracked target with an associated virtual object.** Acceptable types of tracked targets with associated phantoms include multi-targets, cylinder targets, model targets, and object targets. Acceptable types of tracked targets with associated virtual objects include image targets, multi-targets, cylinder targets, VuMarks, model targets, object targets, and the ground plane. A type of tracked target can be used multiple times (e.g., three cylinder targets).

4. **Add at least one additional functional feature to your AR application**. Acceptable functional features include, but are not limited to interactions, physics, animations, and user interfaces.

5. **Create a screen recording or video with commentary demonstrating your assignment**. The video should be NO LONGER THAN 4 MINUTES, but should clearly demonstrate and explain the following:
    a. Your AR application includes at least two tracked targets with associated phantoms and at least one tracked target with an associated virtual object.
    b. Your AR application includes at least one additional functional feature.

6. **Upload your video to YouTube as a Public or Unlisted video**.

7. Clean up your Unity project by removing any unnecessary assets from the "Assets" folder.

8. **Create a zip file (.ZIP ONLY) that contains your entire Unity project folder**, including all the folders (e.g., "Assets") and files (e.g., "Project.sln"). **Your zip file must be 500 MB OR LESS**.

9. Submit the zip file through Webcourses under "Assignments" > "**Homework 2**" and **provide a comment that includes the YouTube link to your video**.

10. If you are interested in sharing your submission with other students, also provide a comment that states your video can be shared with others.

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Scoring

This assignment will be scored as indicated below. The maximum possible score is 10 points.

- Your AR application includes at least two tracked targets with associated phantoms, and your YouTube video demonstrates that each target provides realistic occlusions. **+3 points per target (6 points maximum)**
- Your AR application includes at least one tracked target with an associated virtual object and your YouTube video demonstrates each target. **+2 points**
- Your AR application includes at least one additional functional feature that is interesting, and your YouTube video demonstrates it. **+1 point**
- Your AR application is aesthetically high quality, and your YouTube video demonstrates it. **+1 point**

Deductions

This assignment will be deducted as indicated below. The minimum possible score is 0 points.

- Your submission is late. **-1 point**
- Your submission is more than one week late. **-5 points**
- Your submission is more than two weeks late. **-10 points**
- Your submission does not include a YouTube link to your video. **-2 points**
- Your video is longer than 4 minutes. **-2 points and -2 points per 30 seconds over**
- Your submission is more than 500 MB. **-1 point and -1 point per 50 MB over**
- Your submission is not a .ZIP file. **-2 points**
- Your submission does not contain your entire Unity project folder. **-5 points**
- Your submission is not a Unity 2019.4.17f1 (LTS) project. **-5 points**
- Your assignment is not saved as “Homework 2” under “Assets” > “Scenes”. **-2 points**

Academic Integrity

See the course syllabus for course policies regarding academic integrity.

These descriptions and deadlines are subject to change at the desertion of the instructor.