

CAP 6110: Augmented Reality Engineering

Homework 4

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

Purpose

Learn how to design and implement an AR application with interactions.

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 4" under "Assets" > "Scenes".
3. **Create an AR application with at least two NEW instances of tangible operations.** Note, previously submitted instances of tangible operations will not be counted. Examples of acceptable tangible operations include:
 - a. A single tangible can be translated and rotated to manipulate objects or to modify a parameter.
 - b. Multiple markers can be arranged to express the spatial relationship of associated objects (e.g., arrange instruments on a dashboard).
 - c. The distance between two markers can be used to express a scalar value.
 - d. Two markers moved close together can trigger an "association" command.
 - e. Removing a marker quickly or covering it can trigger a command.
 - f. Markers held in the hand can be used to express gestural input.
4. **Add at least one additional functional feature to your AR application.** Acceptable functional features include, but are not limited to other 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 NEW instances of tangible operations.
 - 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 4**" 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 NEW instances of tangible operations, and your YouTube video demonstrates each instance. **+4 points per new instance (8 points maximum)**
- ☐ 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 4” 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 discretion of the instructor.