



Assignment 3 — Avatar Capture

Deadline: 2019-05-23 23:59

1 Avatar Capture and Rigging (15 Points)

This subtask will be carried out in cooperation with Reactive Reality GmbH. You will be captured with conventional smartphones, after which your Avatar will be reconstructed.

At the rigging and cleanup workshop you will perform the necessary postprocessing steps to rig (add bones for animation) and cleanup your model. This will be done under the guidance of Reactive Reality in our Deskotheque lab.

If you did not attend the cleanup workshop, you will have to do the cleanup process yourself. You will need to familiarize yourself with Blender and add a humanoid rig to your avatar.

If you have not been captured, you will not receive any points for this subtask - there have been multiple opportunities to capture your Avatar. In this case, simply use a standard humanoid Unity avatar.

2 Importing and Animating your Avatar in Unity (10 Points)

Prerequisites: Blender, Unity.

After the rigging workshop, you should have a blender file containing your rigged model.

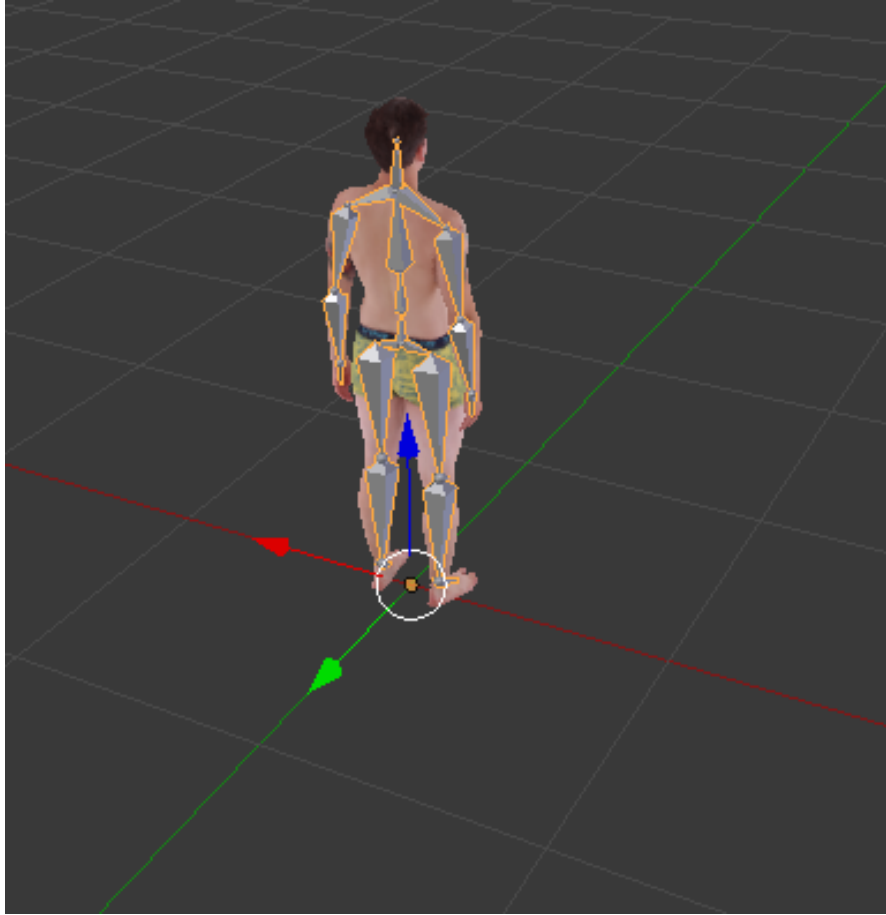


Figure 1: Screenshot of a model in Blender, which will be correctly aligned in Unity after exporting to .fbx.

In order to import your model into Unity correctly, we will export it as an FBX (.fbx) file. If you do not have a rigged model, you will have to perform the rigging process yourself, in order to end up with an avatar you can animate.

Before exporting your model from Blender, make sure to rotate your model (transform - rotation, CTRL-A - Apply Rotation) such that it aligns with Unity's coordinate system. This will likely require a rotation of 180 degrees around the z axis. A screenshot of how the model should be aligned in Blender can be seen in Figure 1.

Afterwards, make sure to export your avatar as an .fbx file via File - Export - FBX (.fbx).

Once this is done, you can add the .fbx model as well as the model texture into a Unity project. Unity will import your .fbx file, but we still need to perform some steps in order to

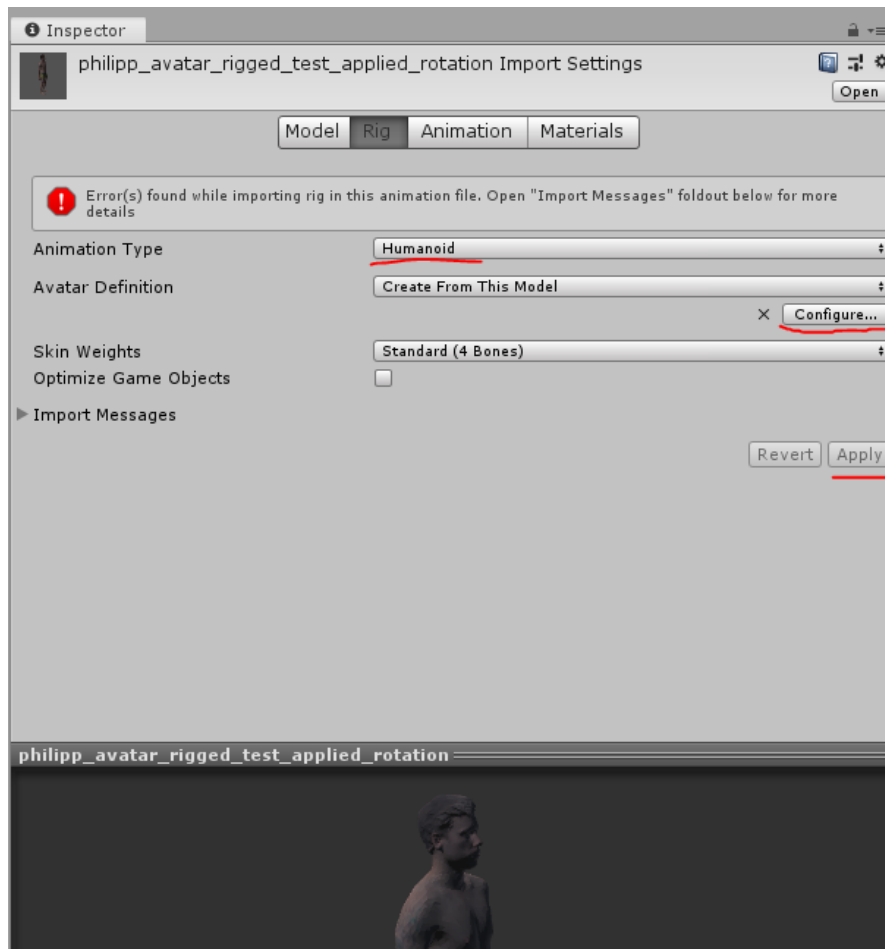


Figure 2: Screenshot of the Avatar Rig Import Settings Inspector window in Unity.

have a correct humanoid rig inside Unity.

Click on the imported model in your Assets view, and the inspector should open up, showing the import settings for this .fbx file. Click on the Rig tab in the Inspector. Set the import settings in the Rig tab for the Animation Type to Humanoid. Hit Apply. If the model is correctly aligned with Unity's coordinate system, the only error you should get is that the Head Bone is not properly configured. A screenshot showing the relevant buttons can be seen in Figure 2.

Click the Configure button. After clicking, you will be brought to a new "Scene", where you can change the bone assignment in the Avatar Inspector window, as seen in Figure 3.

Make sure all required bones are correctly assigned, and that left and right legs as well as arms are correctly assigned. This should be the case if your model is correctly aligned

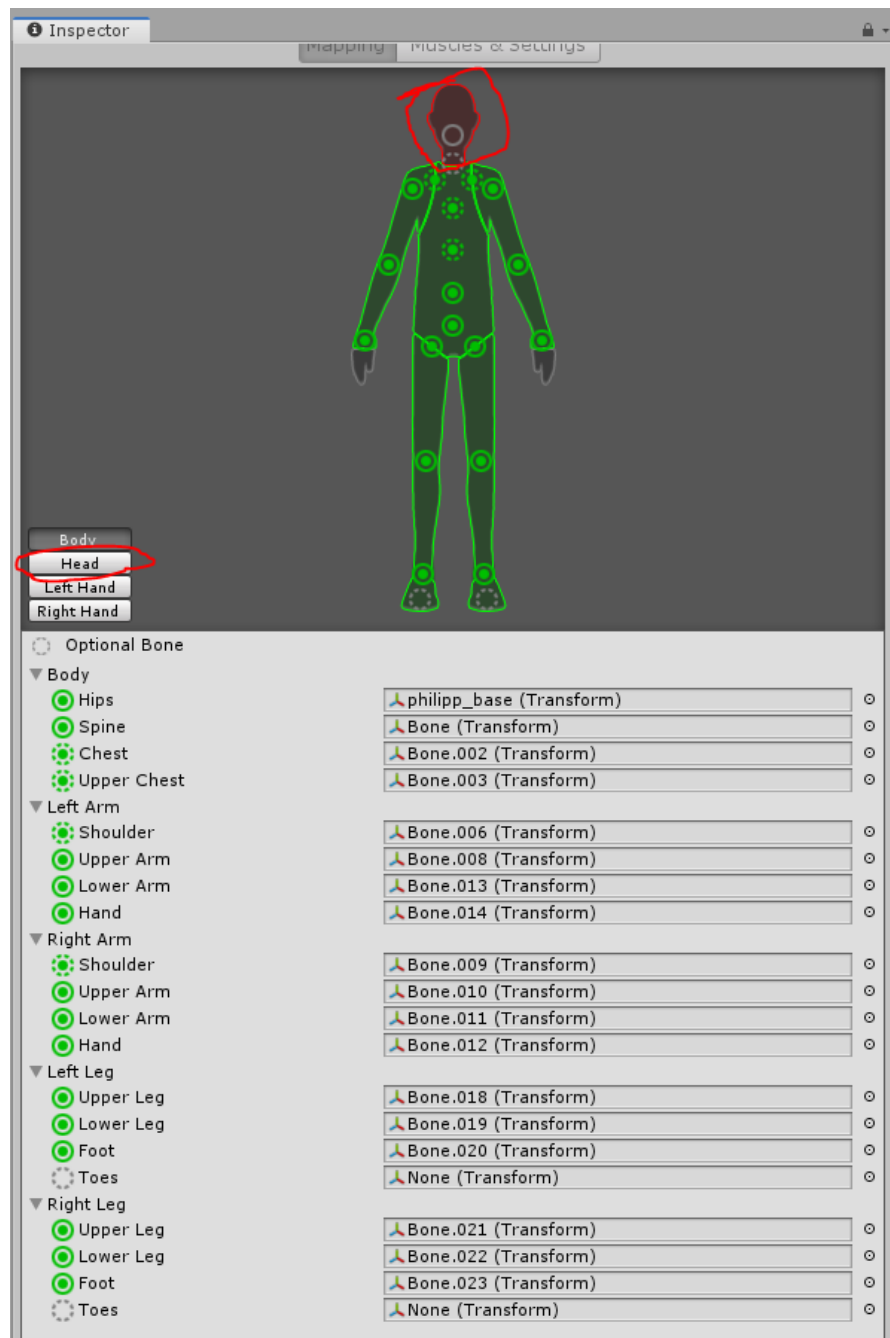


Figure 3: Screenshot of the Avatar Inspector view for Bone assignment in Unity.

inside Unity's coordinate system.

To fix the missing Head bone, click on the Head button and assign the head bone according to the head bone in your exported model. You can see a screenshot of a correctly assigned head bone in Figure 4.

Once this is done, you can click the Apply button on the bottom of your inspector window, and should see your avatar move into a T-Pose, which signifies that the bones are mapped correctly. If the avatar does not move into a T-Pose automatically, click Pose - Enforce T-Pose at the bottom of the mapping inspector. You can then click the Done button, and have a fully rigged model of yourself inside Unity!

You can now test your rigged avatar by playing back some stock animations. We provide a stock animation package in the assignment files as a .unitypackage. You can look at the demo scenes in there and play around with the animations inside this package.

Feel free to use other animations you find interesting and/or funny!

3 Submission

Export your full solution in Unity as a .unitypackage. Show off your animated model in a **30s-60s video of your application running in Unity** (.mp4). We recommend using OBS, a free, open source window and screen capture solution, to record your video (<https://obsproject.com/de/download>)¹. For this task, no report is necessary you only need to submit a video and your .unitypackage. Please make sure to only include necessary files in your .unitypackage, e.g. only the animations that you need, and not all of them.

Upload your package and video as a .zip file in the TeachCenter as a submission.

¹<https://obsproject.com/de/download>

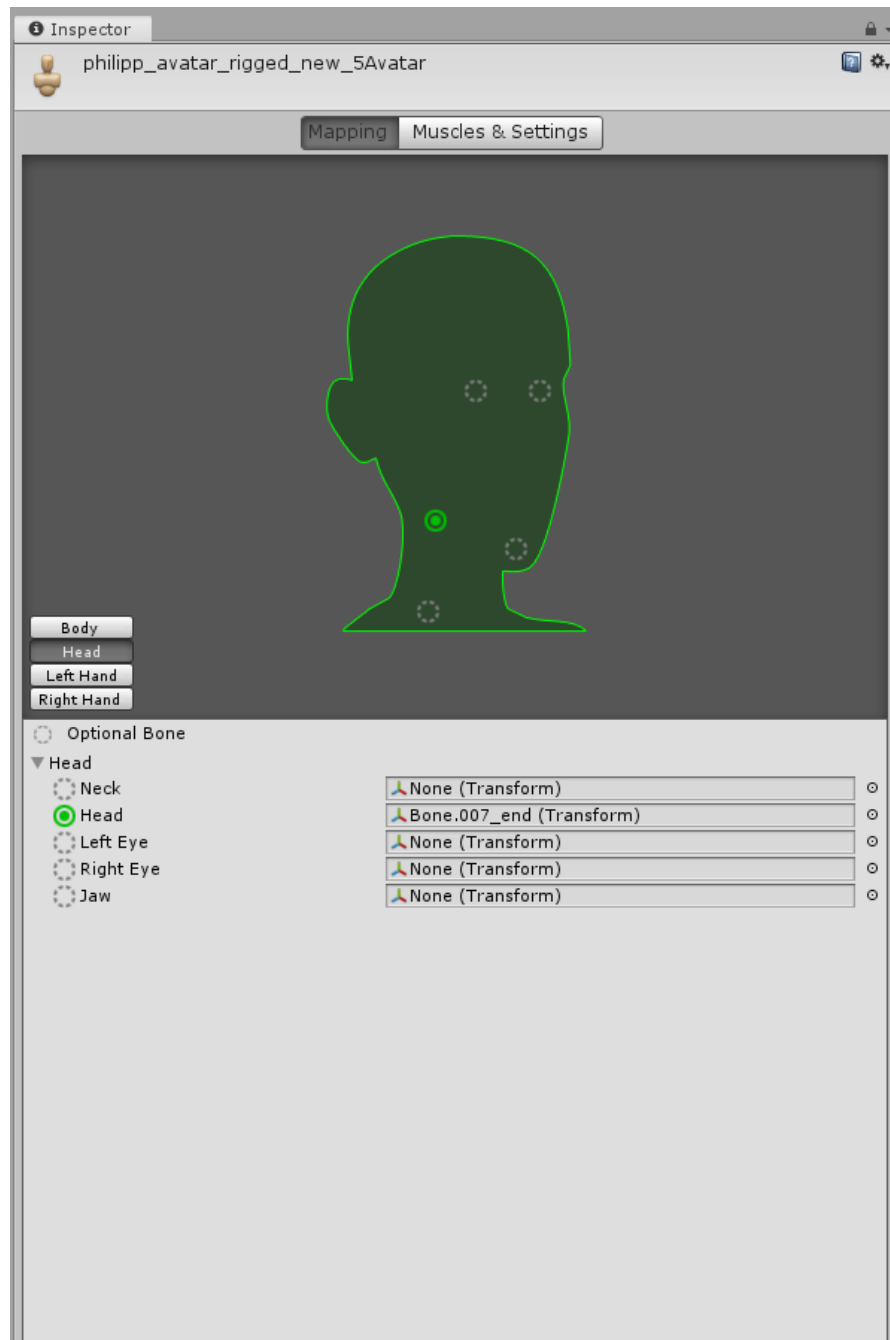


Figure 4: Screenshot of the Avatar Inspector view for Head bone assignment in Unity.