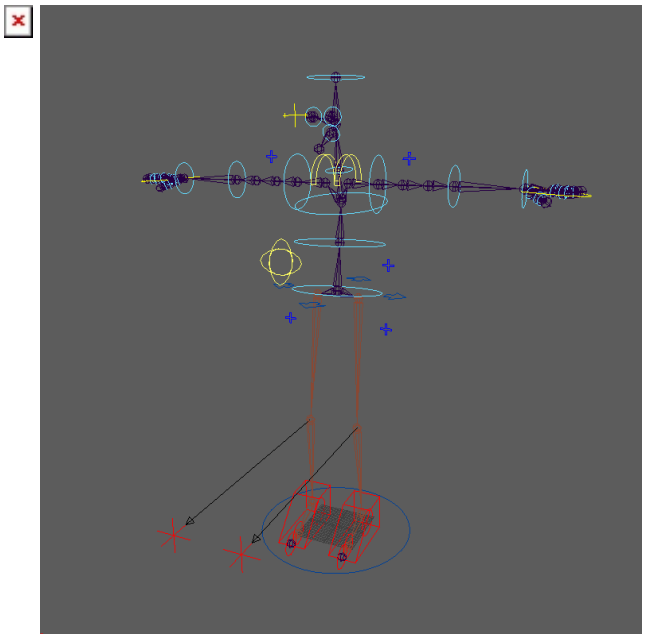
Maya

Create Skeleton

Remarks:

- Export only Deformation System for Unity.
- The Advanced Skeleton Rigging Tool is needed for this step. It is currently not installed on the Innovation Lab computers.

1. Use Advanced Skeleton Rigging Tool to create a rig
2. Fit Skeletons: Select bipedGame.ma for Unity compatibility
3. Auto Orient: Fit Now and click Update now
4. Click Build Advanced Skeleton to create Rig



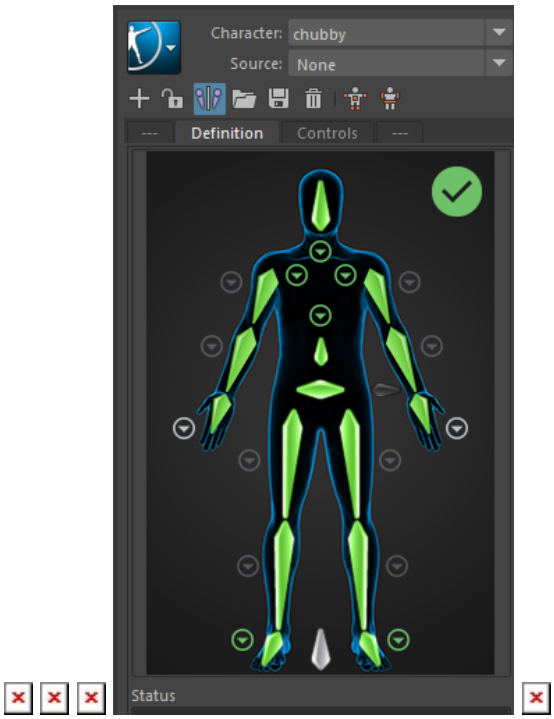
Import Character Model

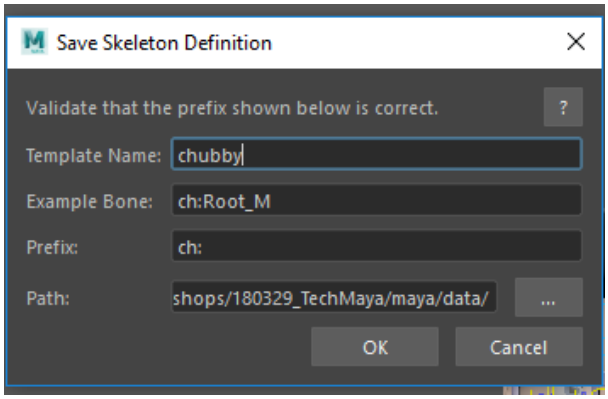
1. Model your character in T-Pose and not Y-Pose to connect the mocap data.
2. File > Create Reference... and choose model file and namespace to link to. Set a short namespace, which is important for import/export.

Characterize

Before we can use mocap data, we need to characterize (link each joint to a global label/character node):

1. Display HumanIK: Windows > Animation Editors > HumanIK
2. In HumanIK click on Create Character Definition
3. Rename Character by clicking on the blue icon > Rename Character
4. Map Joints from Outliner to HumanIK (map only main joints, part joints not need to be mapped) by:
    1. Select Joint in Outliner
    2. Right click on corresponding joint in HumanIK Character Definition and select Assign Selected Bone
    3. Map Root in Outliner is the Hip in Character Definition
    4. Map Chest to the first Spine (Spine1)
    5. Map Neck the first neck (Neck) joint
    6. Go on with all other Joints.
5. If the green checkmark is displayed, everything is OK. The character will get orange if there is a problem.
6. Save Skeleton Defintion at the end by clicking on floppy disk symbol at HumanIK window.
7. The prefix of the skeleton defintion needs to be changed since we use a reference. If we import the mocap data, there will be a Namespace (name of the Character in Motive). Delete the “Root” of of the prefix but leave the “:”. Change the path to the “data” location in your maya project.
8. Save the Scene





Remarks:

- Map Shoulder does not work if character is not in T-Pose. Rotate Arms so that the Model is in T-Pose until character switches to green.
- Also the feets must be parallel to the Z Axis.
- If you change the model, make sure to clear the assignment data before reassigning the bon it to refresh the offsets. The offsets are calculated when you assign the bones.
- If you create a new scene, you can import the saved skeleton defintion so you don't have to do it once again.

Create Control Rig

We do not key joints directly. We key curves/controls in order to fix mocap problems. So we create a custom control rig:

1. Unlock the Character Definition by clicking on the lock in Human IK.
2. Click on “Create Custom Rig Mapping” in Human IK.
3. By default, it assign ankles and hips.
4. Connect controllers to the control rig by select the controller and right click on coressponding control rig point and “Assign selected Effector”.
5. Disconnect the translation on the head (deactivate Map Translation).

Import Mocap Data

In order to import motion capture data, you need to export the correct format (FBX Binary) in motive. Choose File > Import and import the motive FBX binary file.

Also the mocap data has to be characterized:

1. Grab all Joints and set rotation to 0 (in channel box).
2. Select Hip and set x=0 and z=0.
3. Select Hips and move y so that character stands on ground.
4. Open Human IK and click Create Character Defintion.
5. Rename the character to “Mocap”.
6. Assign all bones from mocap Skeleton to Character by selecting bone in Sekelton and right click on Character
7. “Assign Selected Bone”. For Hip and Neck use lowest joint.
8. Save Skeleton Definition: No need to change prefix. Change Location to your maya project. Change Template name to “mocap_CD”.
9. In Human IK, select as Character your Character, and on Source select the Mocap Character.
10. Select the pole vector and set it to follow (10) in channel display.
11. You need to Bake the Mocap Animation to the Human IK skeleton: Human IK > Bake > Bake Custom Rig

After that, you can start clean the Mocap Data.

Update Mocap Data

Import Otions > File Type set to FBX. When you know File Content: import Add and Update Animation, it will just update the motion data. You do not have to recreate everything.

Fix Mocap Data

Select Controler to fix. Window > Animation Editors > Graph Editor Select parameter to fix and time range to fix with mouse Curves > Simplify Curves (set start and end frame).

Do not Simplify over a whole take at once.

Export Rig

Open the original character file.

Open Deformation System in Outline. Select Root and Geometry. File > Game Exporter Export only Selection File Type: FBX (Binary) 2013

Export Animation

File > Export Game FBX 2018 Filetype Activate Animation in Export window. Acitvate Bake Animation Add Animation Clips in Export Window