Vanilla Arcade

VR Motion Capture

Contents

Section 1: Introduction

1.1: VR Motion Capture.

VR Motion Capture refers to recording actions of human actors, and using that information to animate digital character models in 2D or 3D computer animation. Using VIVE tracking is a great way to obtain Low latency, close to real time, results. VR Motion Capture uses only 5 trackers which allows you to, with ease, track and record body movement accurately.

Section 2: Setup

2.1: Wearing the Trackers:

- If the trackers do not come with **straps**, you may **make your own**. An easy way to make them is by using **Leather or Velcro straps** and strapping them on the trackers from **behind** so that they are **adjustable**.
- Once you have the straps made, continue on to wear them as defined below:
- Wear **two trackers**, one on each **elbow**.
- Wear **two trackers**, one on each **foot**.
- Wear **one tracker** on your **waist (Back)**.
- Wear **one Headset**.
- Hold the **controllers**, one in **each hand**.
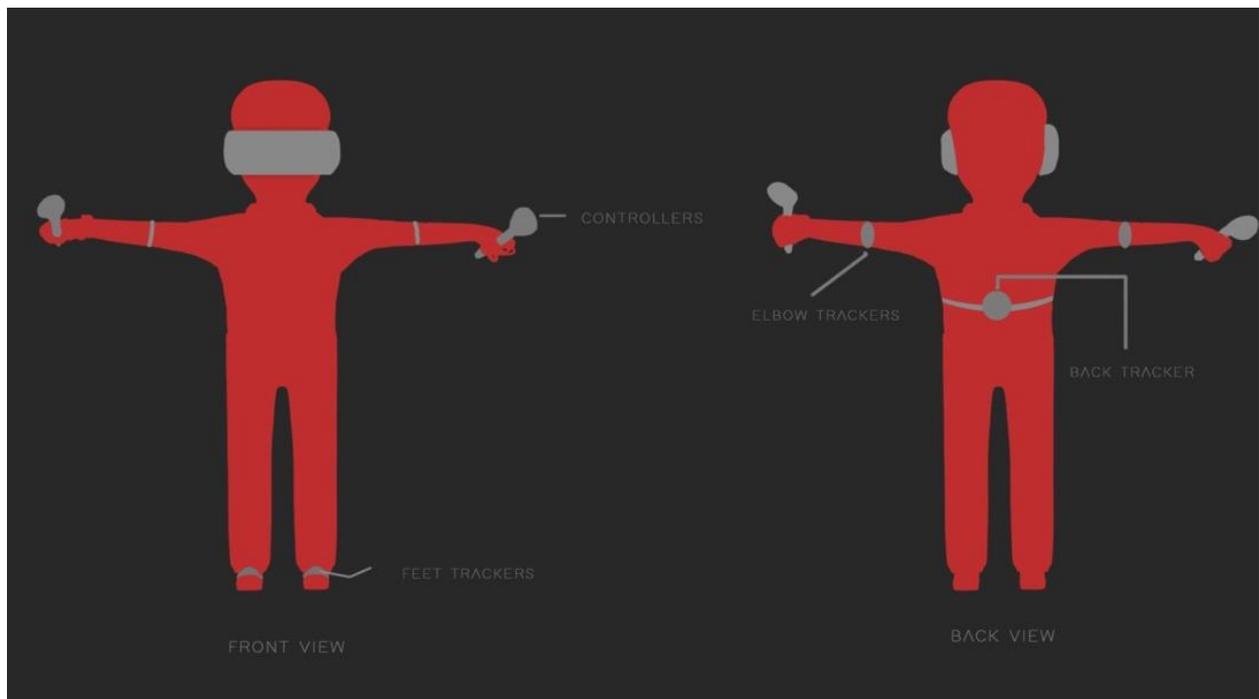- Once you have all the trackers in place, you are **ready to calibrate** your **character**

Figure 1:How to wear trackers

Section 3: Getting Started

Getting Started:

(At least 2 people required to set up VR Mocap)

- Start by setting your project's **.Net Framework Settings** to **.Net 4.x** by navigation to Edit > Project Settings > Player > Other Settings > API Compatibility Level*
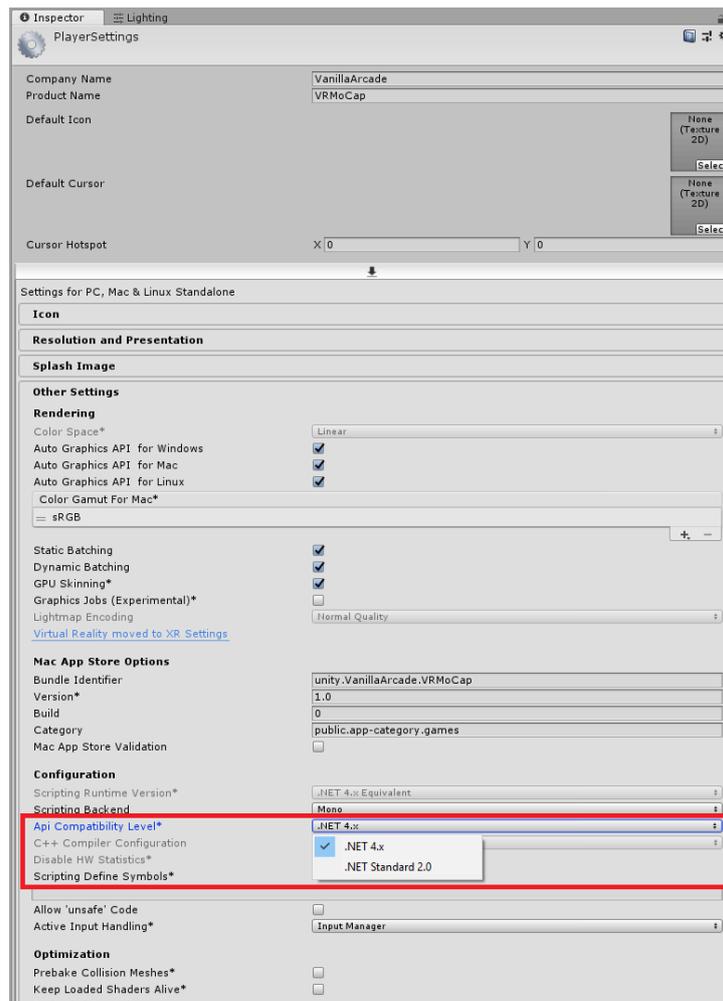

Figure 2:Unity .NET Framework Settings

- Now drag the **MoCap Prefab MoVR/Prefabs/MoCapPrefab** into your scene
- **Press Play**
- Once in play mode, try to orient **your direction with the direction of the character** in the scene
- Make sure all the **trackers are being tracked**. If not, adjust the Vive sensors and your trackers
- Once they are tracking, enter play mode and stand in **T-pose**. Ensure that trackers are aligned as shown in Figure 1, Otherwise it might not calibrate correctly press and **"A"** Key for about 2 seconds.

- A **UI** will pop up in your game view which will allow you to **adjust your rig** should there be any difference between the character and your human model.
- If trackers do not seem to be calibrated correctly you may click **"Recalibrate"** button in UI popup to calibrate it again.
- To perfectly adjust the rig, **tweak the setting** from the UI.
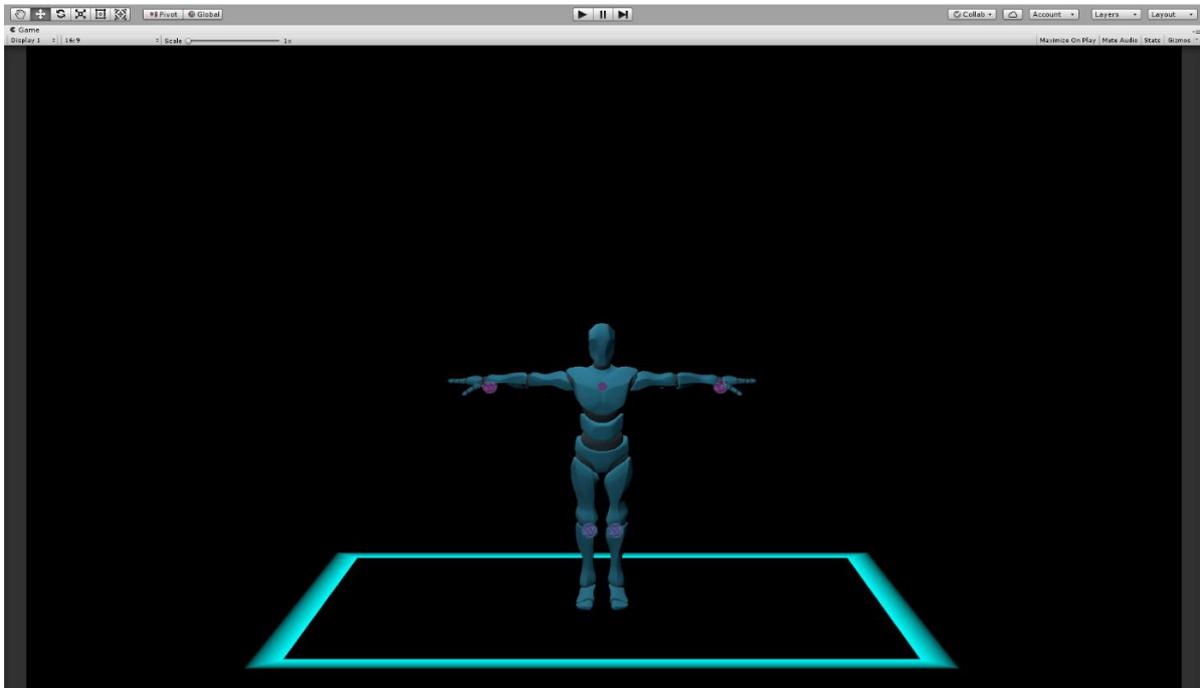

Figure 3:Demo Scene Preview

Section 4: UI Explained

UI Explained:

The UI in your game view allows you to make even the slightest **adjustments** to your **character rig**

- **Adjust Rig**: Lets you adjust the size of the character
- **Adjust LookAt**: Aligns the direction of the head vertically
- **Hip Offset**: Translates the position of the character from the centre
- **Hip Rotation**: Rotates the character from the centre
- **Right Hand offset**: Adjusts the position of the right hand
- **Left Hand offset**: Adjusts the position of the left hand
- **Right Elbow Offset**: Adjusts the position of the right elbow
- **Left Elbow Offset**: Adjusts the position of the left elbow
- **Right Hand Rotation**: Adjusts the rotation of the right hand
- **Left Hand Rotation**: Adjusts the rotation of the left hand

- Adjust while standing in **t-pose for accurate results**. Once you have calibrated your character with your body position, you may **start motion capturing**.
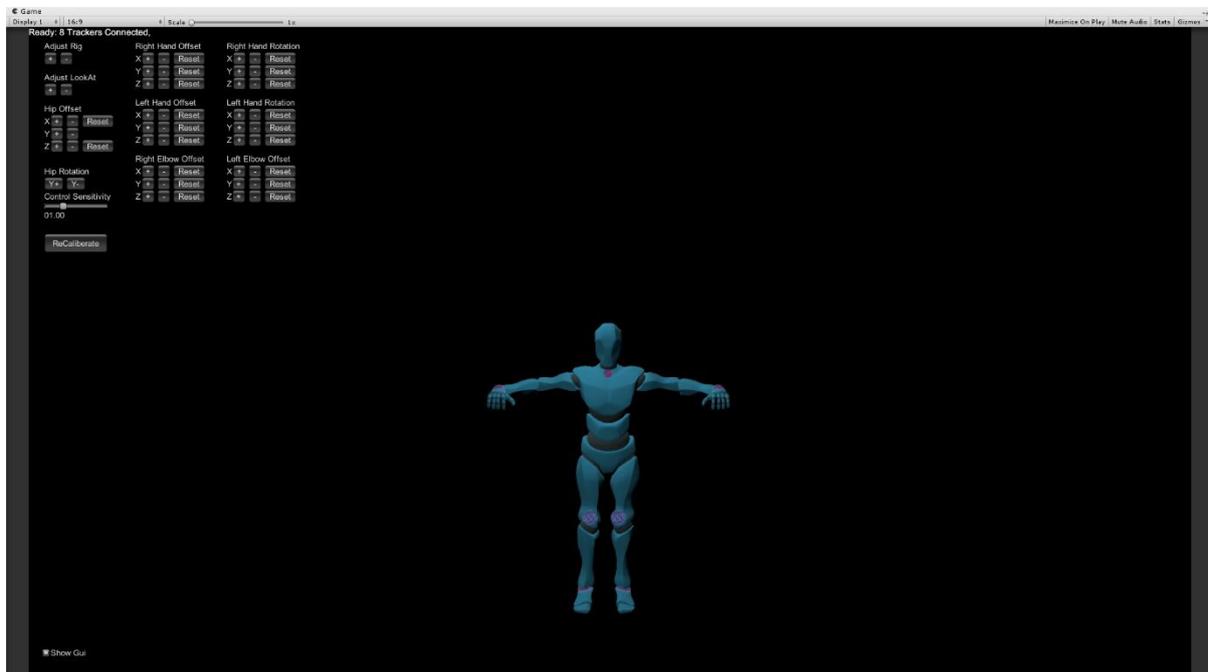
Section 5: Recording

Recording:

(**Before** entering Play Mode)

- Insert **"Original MA File Path"** and **"Save Folder Path"** paths into the **Maya Animation Recorder script** component attached to the character
- "Original MA File Path": insert the **Maya ASCII** file path of the character in your scene
- **"Save Folder Path"** insert the path of the file where you would like to **save the recorded animations**
- Once you have entered **both paths**, enter Play Mode and ensure that your character is calibrated.
- Press **"Q"** to **start** recording
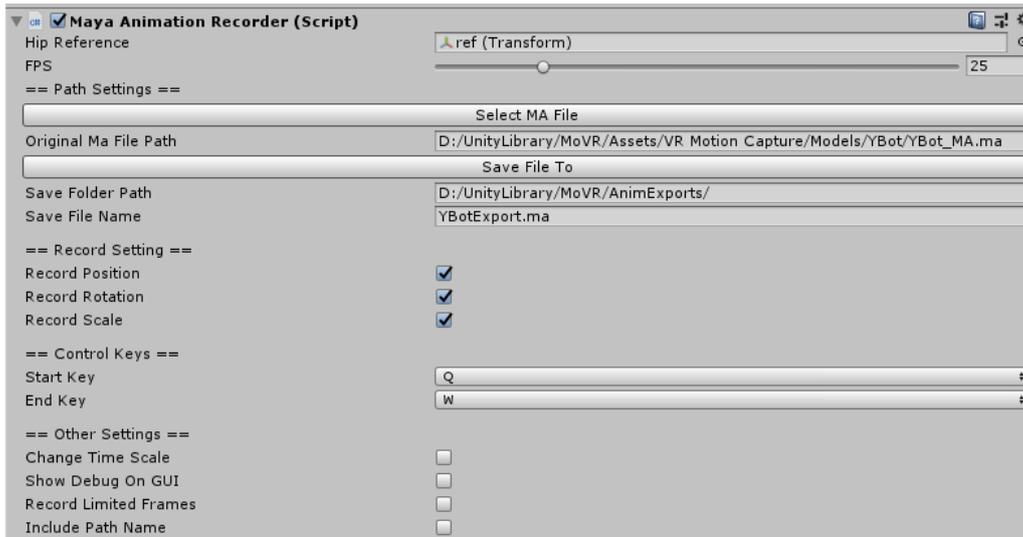- Press **"W"** to **stop** recording

Figure 5:Maya Animation Recorder Script attached to Character Model

Section 6: Using your own character.

If using your own character:

- If you want to use **another model** export a Maya ASCII file of the character you are using and **import it** into your project. This file should **have no animations** applied. Place your ASCII file in scene hierarchy and copy the **"IK Controller Script"** and **"Maya Animation Recorder"** script from the default character onto your character in hierarchy as components.
- Make an **animator controller** for your character in hierarchy. In the animator settings, **check the IK Pass**. Your character is now **ready to use**!
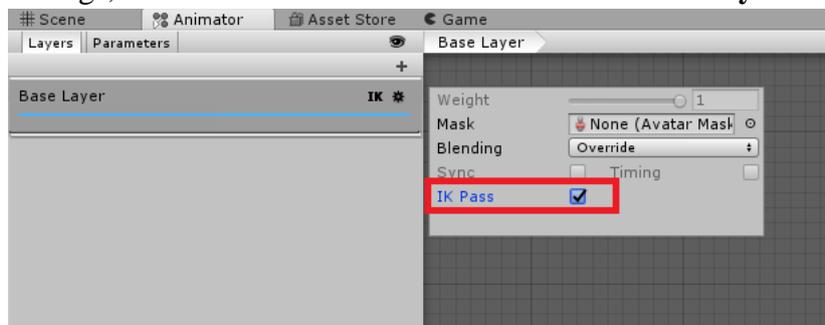

Figure 6:IK Pass set to True

That's it! Enjoy your VR Motion Capture!

For any queries, contact:

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