

FOOTSTEP SOUND SYSTEM & FOOT PLACEMENT IK

Manual

SUMÁRIO

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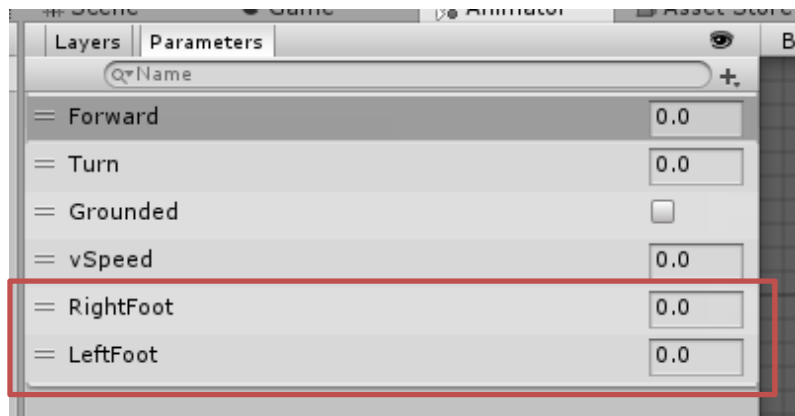
1 INTRODUCTION

This package was designed to work with humanoid characters. Use it with generic character is not guaranteed.

2 SETUP ANIMATIONS CURVES

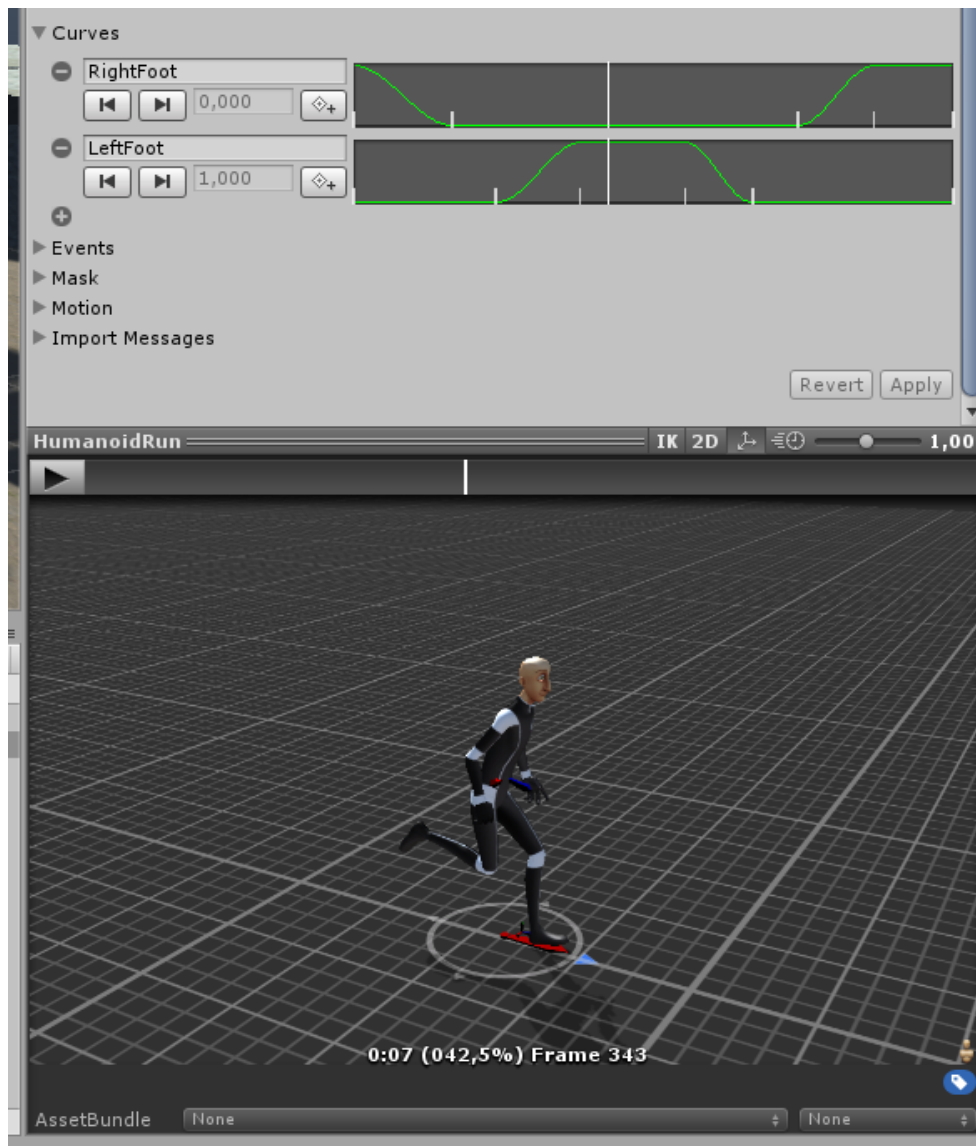
The demo animations already comes with animation curves setup. But, if you want to use your custom walk and run animations, you have to setup it manually.

Foot IK and Footstep scripts get float information from animator. Animator controller must have two parameters: *RightFoot* and *LeftFoot*, like bellow:



Values for these two parameters are controlled by the animation curves in the animation clip. To setup a curve, go to your animation file, and open the clip and go to curves.

Values must be in the range of **0 to 1**. **0 (zero)** means foot completely out of ground, and **1** means foot placed on ground. Smooth changes between these values will get smoother placement. All animations used in the demo version are already setup. You can check how it was setup in the animation files: **Dias Games\Foot Solutions\Models\Animations**.



3 SETUP FOOT IK PLACEMENT

To setup Foot IK Placement, simply add Foot IK script to your character. If your animations are already setup with curves, it will work. Foot IK parameters are explained bellow:

Max Foot Height: Maximum height that a foot can be placed. This value is relative from character pivot position.

Min Foot Height: Minimum height that a foot can be placed. This value is relative from character pivot position.



Ground Layer Mask: Set which layers that should be considered to adjust feet.

Offset From Ground: Sometimes different avatars can have different foot position. You can set this offset to adjust position of feet.

Foot Adjust Speed: Time in seconds that foot must be adjusted on ground. Greater values result in smoother placement. Smaller values get faster placement but less smooth.

Body Adjust Speed: Works as the same of **Foot Adjust Speed**. Body must be adjusted to allow IK work correctly with feet.

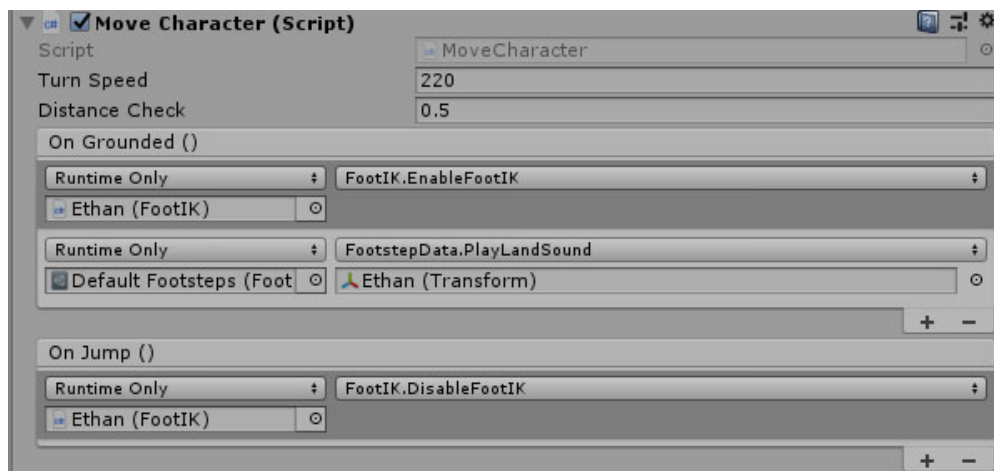
Debug Raycast: When checked, a Pink Line will be drawn in the Scene tab showing the line cast that is being used to find ground.



3.1 ENABLE AND DISABLE FOOT IK

Some cases you need to disable Foot IK Placement (i.e. When Jumping) to avoid weird behavior. There are two methods that can be called to enable and disable Foot IK: *EnableFootIK()* and *DisableFootIK()*. Use these methods is the correct way to disable foot placement because system will made a smooth transition to avoid weird behavior.

In the Demo scene, you can see in the MoveCharacter script that these both methods are called. When character is on ground it enables Foot Placement, and when is Jumping, it disables.

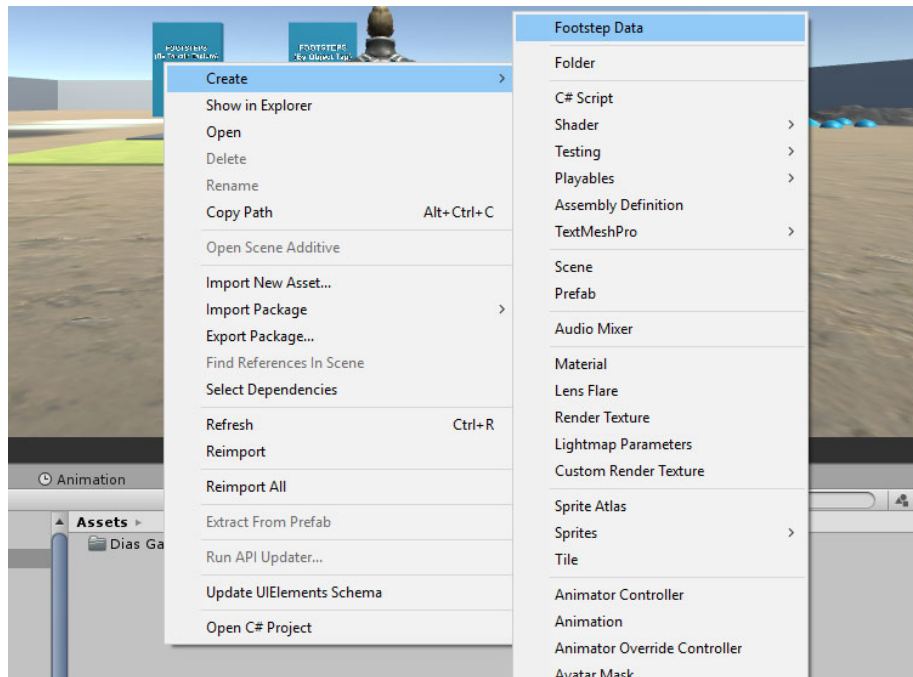


4 FOOTSTEP SYSTEM

Footstep system works with a custom asset called Footstep Data. Footstep Data files store all information about ground type and sounds related to it. To recognize a ground type, system casts ground and gets its Tag. Tag defines which kind of ground you are walking. When you are walking through Terrains, this terrain must have a tag named as "Terrain" and system will get the texture name that is bellow character foot. This texture must have in the name the tag of ground type. For example: If you have a terrain texture for grass that is named as: *Forest_Grass_albedo*, system will recognize it, because this texture name has "Grass" tag inside the name. If your texture doesn't have it inside, change its texture name and put **Grass** in somewhere.

4.1 CREATING FOOTSTEP DATA FILES

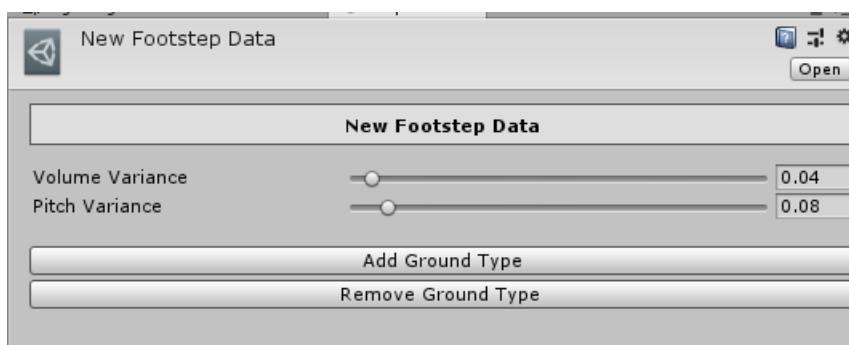
Go to the folder you want to create the file, and click with the right mouse button. Go to Create -> Footstep Data.



A new file will be created. Name this with the name you want.

4.2 SETUP FOOTSTEP DATA

Select a Footstep Data file. Inspector will show its properties.

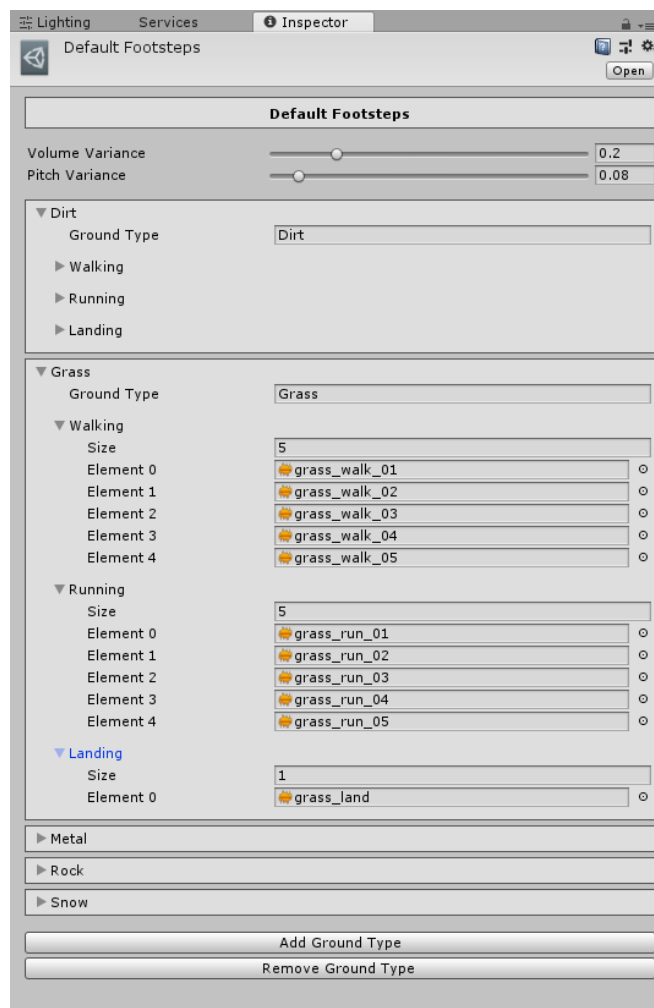


Volume and Pitch variance are applied to the Audio Source to give a good effect of footstep variation.

Use the Add Ground Type button to add a Ground type. Open this new type. You will have something like the image bellow:

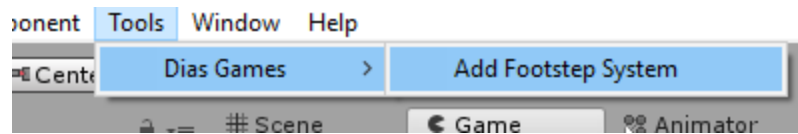


Ground type must be the tag used by the ground or the name of texture. You also get 3 array parameters for audio clip: Walking, Running and Landing. These parameters store all footstep audio clips that should be played when character hit foot on the ground. You can set as many clips as you want, and system will random between them to avoid play the same clip every time. Opening the Default Footstep file, you can see how it was setup:

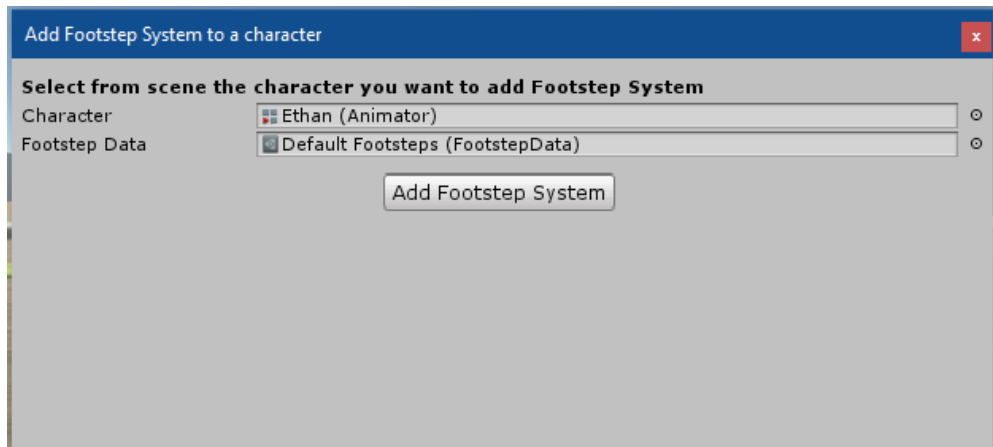


4.3 ADD FOOTSTEP SYSTEM TO CHARACTER

To allow your character play footsteps sounds, go to: **Tools -> Dias Games -> Add Footstep System**.



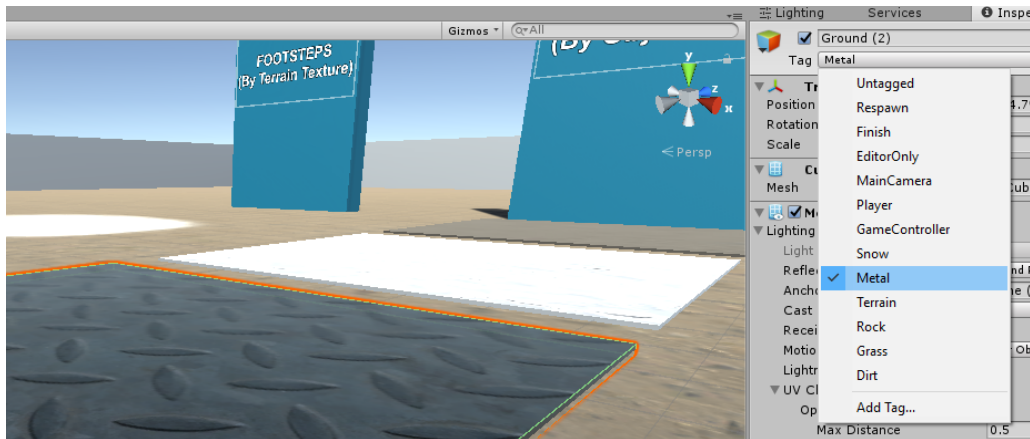
A new window will be opened:



Fill character field with your character placed in your scene. You can set a different Footstep Data if you want. Press Add Footstep System and your system will be ready to work.

4.4 SETUP GROUNDS IN THE SCENE

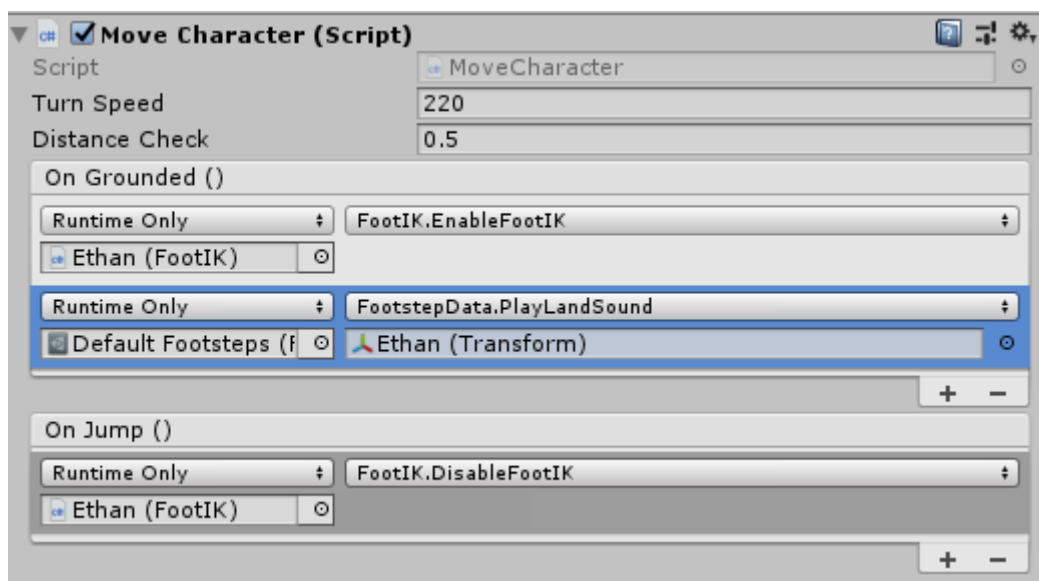
If you have created a ground in your scene and you want to set its type, select this ground and change its tag. For example, if you create a ground that is metallic, you can select this ground and change its tag to Metal:



Now, every time your character walk over this ground will play a footstep for metallic grounds.

5 PLAY LAND SOUNDS

Footstep Data has a method to play land sounds. In the demo, it is called every time player finishes a jump. This method requires the character transform. In the demo example, it's called by OnGrounded event:



6 SUPPORT

If you have any doubt, you can contact me by e-mail: rodrigoaadias@hotmail.com. You can also use the Official Forum Thread for this asset: <https://forum.unity.com/threads/foot-placement-ik-official-thread.610129/>