IK Helper Tool

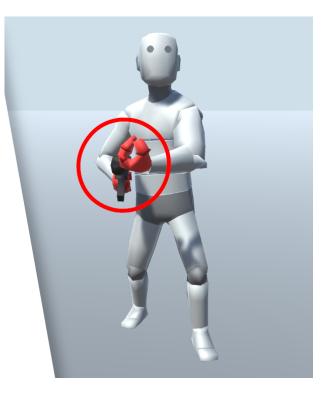
Unity Script Asset

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Online Documentation

Video Tutorial

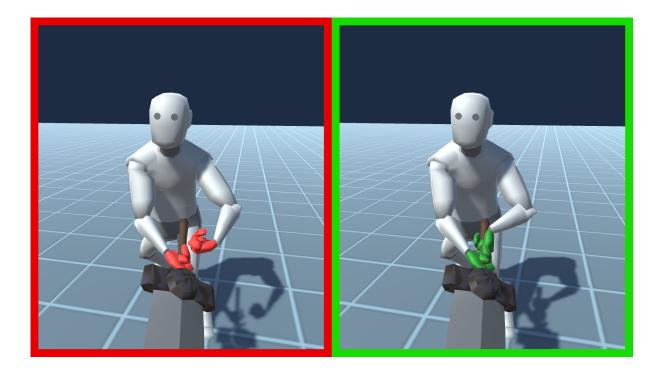


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Overview

IK Helper Tool is a script that fixes mispositioned hands when retargeting animations (holding an item or prop) between two models with different arm rig length.



Step-by-Step Guide

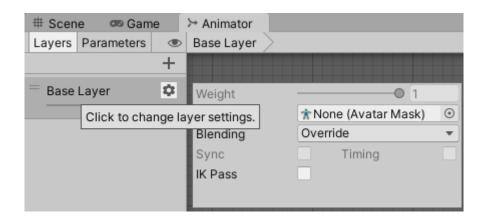
1 - Add the IK Helper Tool Script as Component to your character model

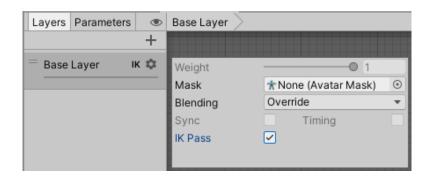
Select your character model and click on "Add Component" to search for the script.

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	# IK Helper 1	Гооі							
	New script	t		>					

2 - Check the IK Pass box

Open the Animator (Window > Animation > Animator) and click on the gear to change the Base Layer settings. Check the IK Pass box.



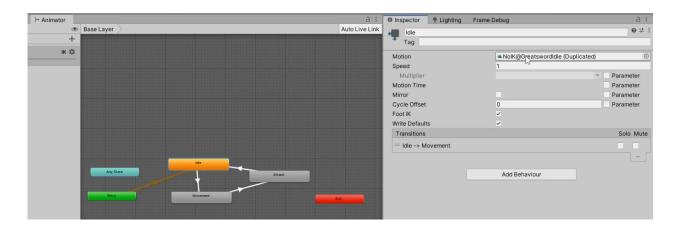


3 - Duplicate the Animation Clips that you want to fix

Duplicating the animation clips will make them writable.

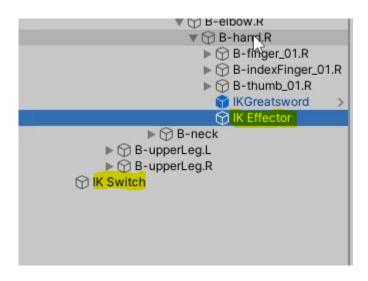


Once the animations are duplicated and renamed (to tell them apart from the originals), put the duplicated animation clips in their corresponding animations in the Animator.



4 - Create two empty GameObjects: The IK Effector and the IK Switch

Create two GameObjects: One will be the IK Effector and the other the IK Switch. Make the IK Switch child of the Model and the IK Effector child of the hand that does NOT need any fix.



Don't forget to reset their transform positions by making every value in the Transform of the GameObjects equal to 0.

🔻 🙏 Transform				0 ≓	1
Position	X 0	Y 0	Ζ0		
Rotation	X 0	Y 0	Ζ 0		
Scale	X 1	Y 1	Z 1		

In the 'Hand' field we can select which hand needs to be fixed. Usually there is one hand that controls both the object being held and the other hand.

V	# 🗹 IK Helper Tool (Script)				0	走	:
	Script		IK	HelperTool				۲
	IK Switch	N	lone	e (Transform)				۲
	Hand Effector	N	lone	e (Transform)				۲
	Hand	L	.eft	Hand				•
			~	Left Hand	 			
				Right Hand				

The IK Switch and Effector we just created should be referenced in the script.

🖷 🗯 🔽 IK Helper Tool (Scrip	it)	0 ≓ :
Script	IKHelperTool	۲
IK Switch	K Switch (Transform)	۲
Hand Effector	LIK Effector (Transform)	۲
Hand	Left Hand	

5 - Change the Position Property of the IK Effector

For the next step we need to select our character and, while it is selected, we are going to open the Animation window using the Unity top menu bar (Window > Animation > Animation).

Asset Store Tools Tools Jobs	Window Help			
5	Panels	>		
# Scene 🗢 Game 😕	Next Window	Ctrl+Tab		
Layers Parameters	Previous Window	Ctrl+Shift+Tab	Base Layer	>
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	Asset Management	>		
	TextMeshPro	>	_	
	General	>	_	
	Rendering	>		
	Animation	>	Animation	Ctrl+6
	Audio	>	Animator	
	Sequencing	>	Animator Paramete	r
	Analysis	>		
	AI	>		
	UI Toolkit	>		

We will see something like this:

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>> CharacterExampleGreatsw	vord (No	-0.05	88	0		\diamond	0	
>> CharacterExampleGreatsw	vord (No	-0.01	30	0		\diamond	\diamond	
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> CharacterExampleGreatsw	vord (No	2.732	1e	0	Ŧ	\diamond	0	
	Dopesh	neet		Curves	5		~	

Select the animation to fix in the drop down at the top. Carefully scroll down to bottom and make sure you don't edit any values, we can mess up the animation. If that happens we can make a new duplicate from the original animation again. At the bottom we will see a button called "Add Property". Click on it, look for the IK Switch GameObject we created before and select to Add Position property (under Transform).

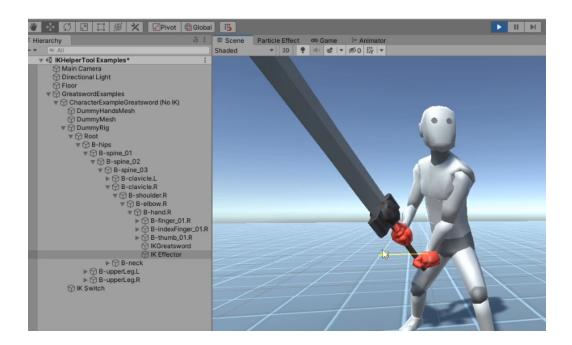
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	📙 🕹 R	otation										+	
Add Property	🙏 S	cale										+	

Then we will set the value of Position.y to 1 in the first and the final frame.

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A Position.x 0		\diamond																														\diamond
L Position.y		\$																														•
L Position.z 0	۰.	♦																														•

6 - Place the hands in their correct position

Now we should be able to move the position of the hand to be fixed by moving the position of the IK Effector in PlayMode.



It's recommended to reduce the animation speed to 0 in the Animator to have an easier time doing this.

Inspector Inspector	g Frame Debug	а:
H Idle		Ø ∓⊧ 9
Tag Tag		
Motion	NolK@Greatswordldle (Duplicated)	۲
Speed	0 -	
Multiplier	1	Parameter
Motion Time		Parameter
Mirror		Parameter
Cycle Offset	0	Parameter
Foot IK	✓	
Write Defaults	×	
Transitions		Solo Mute
= Idle -> Movement		
		_
	Add Behaviour	

Without exiting PlayMode and once the hand is in the correct position, we should copy the IK Effector position components.

Inspector State	Frame Debug	2
🕥 🗹 IK Effector		Sta
Tag Untagged	 Layer Default 	
🗸 Transform	Reset	0 ‡
Position	Reset	Z 0.15
Rotation	Move to Front	Z 182.21
Scale	Move to Back	Z 1
	Copy Component	
	Paste Component As New	

7 - Paste the Transform Components in the IK Effector and test the Animation

Finally just paste the Transform Component Values in the IK Effector outside PlayMode and we are done.

Tag Untagged	▼ Layer D	efault	
🛛 🙏 Transform	Deart		0 ≓
Position	Reset	677878	Z 0.8624491
Rotation	Move to Front	3.248	Z 95.183
Scale	Move to Back		Z 1
	Copy Component	_	
	Paste Component As New		
	Paste Component Values		
	. W		

Don't forget to turn the speed of the animations back to their original value (inside the Animation State from the Animator Controller component).

Contact Support

For support, questions or suggestions regarding this product send me an email to:

support@keviniglesias.com

Kevin Iglesias - <u>www.keviniglesias.com</u>

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