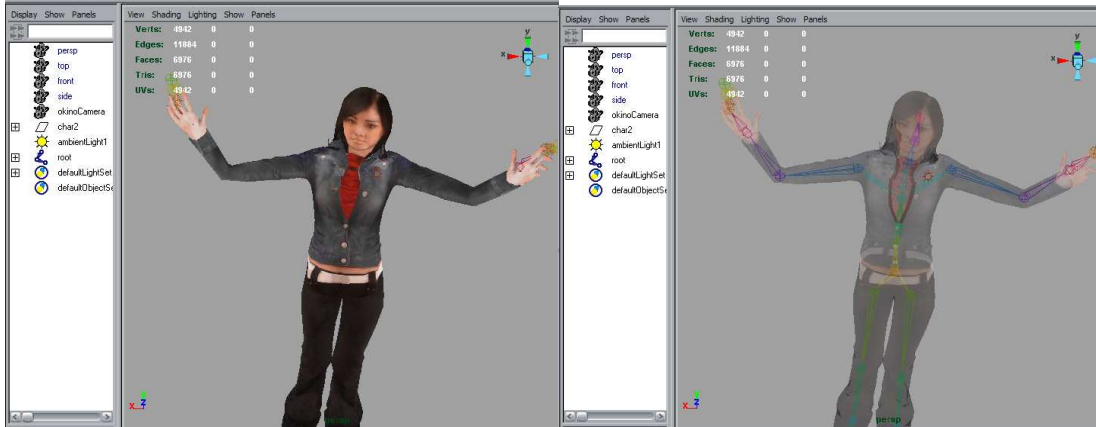


## Character animation using motion capture files in Maya

With special thanks to the CMU Graphics Lab Motion Capture <http://mocap.cs.cmu.edu>  
Jean-Marc Gauthier Spring 2007.



This tutorial shows how to animate a character using motion capture files in Maya. We download a motion capture file from the Carnegie Mellon Motion Capture Database and use with a 3D character.

*“The data used in this project was obtained from [mocap.cs.cmu.edu](http://mocap.cs.cmu.edu). This data is free for use in research and commercial projects worldwide. The database created with funding from NSF”* includes 2622 motions files.



### CMU Graphics Lab Motion Capture Database

[Home](#) | [Search](#) | [Tools](#) | [Resources](#) | [Rendered Movies](#) | [FAQs](#) | [Suggest a Motion](#)

View All: [Subjects](#) | [Motions](#)    Browse: [Motion Categories](#)    Search Help

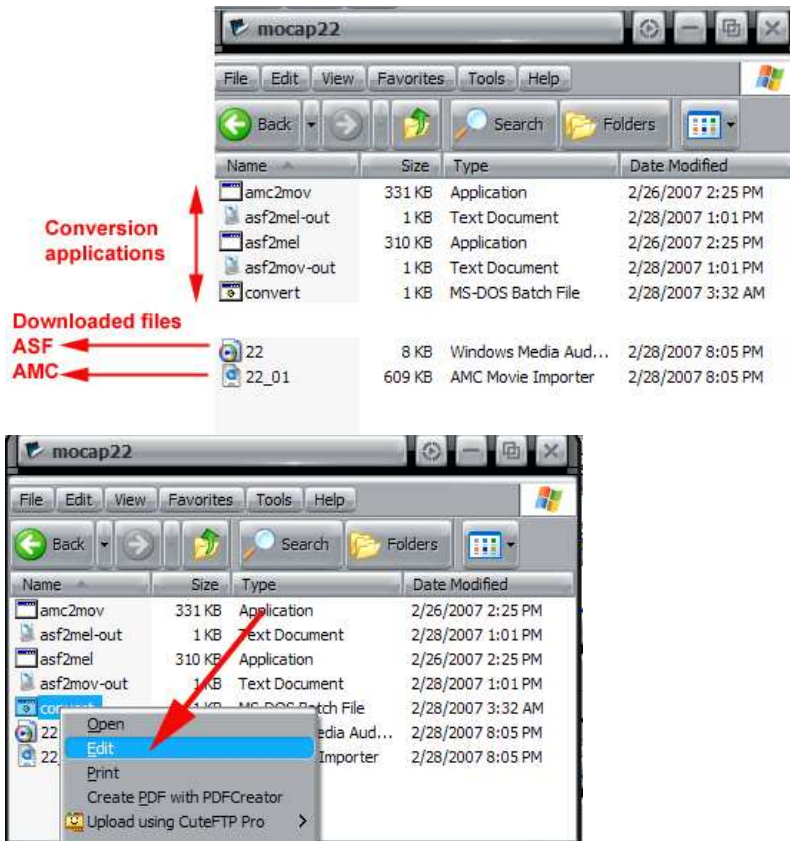
subject number    motion or keyword  
(e.g. 41)    (e.g. run)

**motion calibration file #22**    **watch the animation**

**movement file #22-1**

Subject #22 (human interaction (2 subjects - subject A))	<a href="#">file index</a>	<a href="#">asf</a>
Trial #	Motion Description	
1	B sits; A pulls up B (2 subjects - subject A)	<a href="#">tvd</a> <a href="#">c3d</a> <a href="#">amc</a> <a href="#">mpg</a> <a href="#">Animated</a>

Go to <http://mocap.cs.cmu.edu/asfamcmel/asfamcmel.php> Download amc2mov asf2mel and convert and save inside a new folder called mocap. Download the asf and amc files for the motion of your choice inside the mocap folder.



LMB on the convert application > select Edit. Edit the text in Notepad

The original text is

```
asf2mel -f asffile.ASF import_skeleton-asffile.mel > asf2mel-out.txt
amc2mov -f asffile.ASF amcfile.AMC 60 import_mov-asffile.mel
amcfile.AMC.MOV > asf2mov-out.txt
```

The edited text in this example is

```
asf2mel -f 22.ASF import_skeleton-22.mel > asf2mel-out.txt
amc2mov -f 22.ASF 22_01.AMC 60 import_mov-22.mel 22_01.AMC.MOV >
asf2mov-out.txt
```

After the conversion, three converted files are added to the folder:

**Conversion applications**

**Downloaded files**

**ASF**

**AMC**

**Converted files**

**Motion**

**MEL Motion**

**MEL Skeleton**

Name	Size	Type	Date Modified
amc2mov	331 KB	Application	2/26/2007 2:25 PM
asf2mel-out	1 KB	Text Document	2/28/2007 8:13 PM
asf2mel	310 KB	Application	2/26/2007 2:25 PM
asf2mov-out	1 KB	Text Document	2/28/2007 8:13 PM
convert	1 KB	MS-DOS Batch File	2/28/2007 8:13 PM
22	8 KB	Windows Media Aud...	2/28/2007 8:05 PM
22_01	609 KB	AMC Movie Importer	2/28/2007 8:05 PM
22_01.AMC	421 KB	QuickTime Movie	2/28/2007 8:13 PM
import_mov-22	10 KB	Maya Script File	2/28/2007 8:13 PM
import_skeleton-22	6 KB	Maya Script File	2/28/2007 8:13 PM

Maya 7.0: .\untitled

File Edit Modify Create Display Window Animate Deform Skeleton Skin Constrai Character Help

Animation Cloth Curves Custom Deformation Dynamics Fluids Fur Hair PaintEffects Polymesh Rendering Subdiv Surfaces Toon VrealPatch

View Shading Lighting Show Panels

Verts: 0 0 0

Edges: 0 0 0

Faces: 0 0 0

Tris: 0 0 0

UVs: 0 0 0

Look in: mocap22

Files:

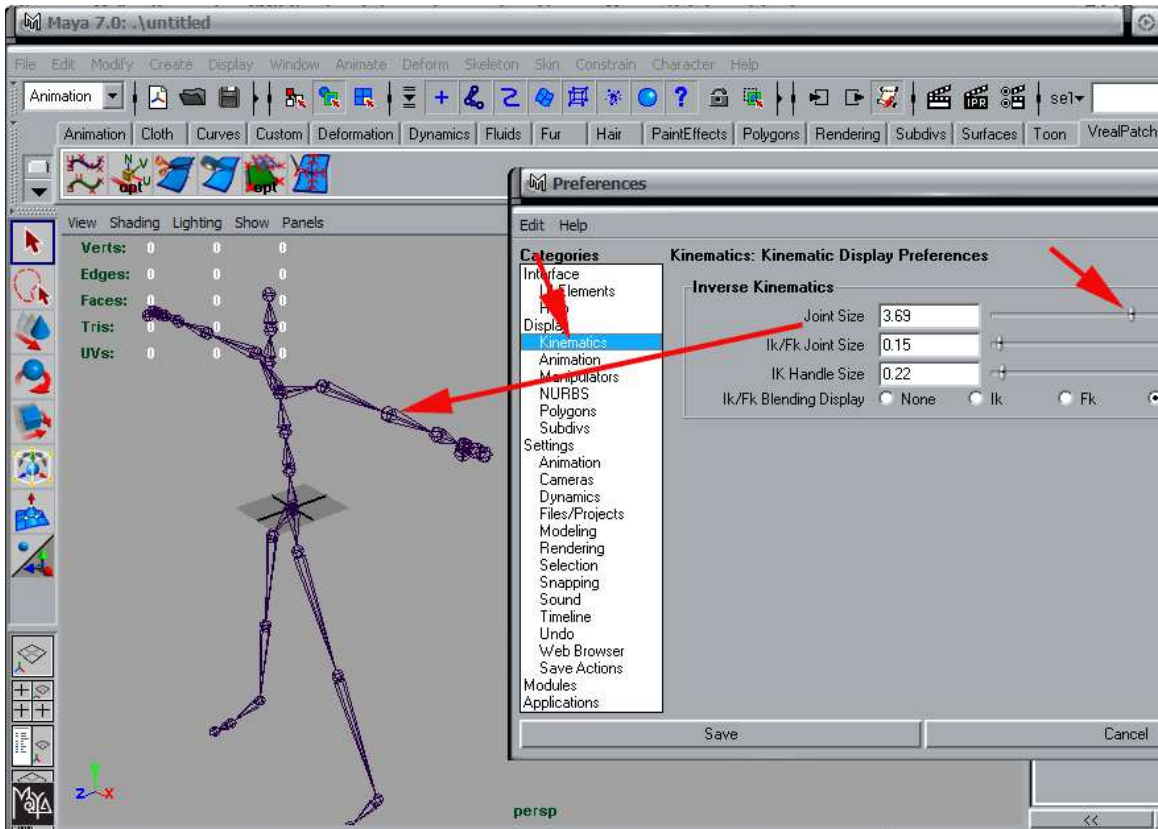
- 22
- 22\_01
- 22\_01.AMC
- amc2mov
- asf2mel
- asf2mel-out
- asf2mov-out
- convert
- import\_mov-22
- import\_skeleton-22

File name: import\_skeleton-22

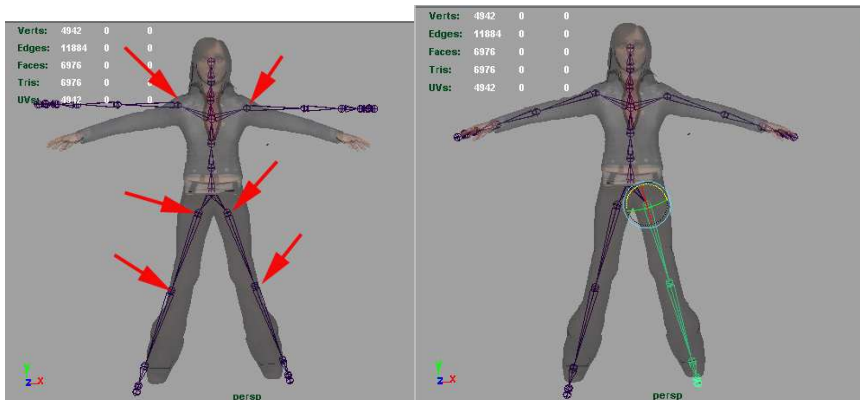
Files of type: Best Guess (\*.\*)

Buttons: Import, Cancel, Set Project..., Options...

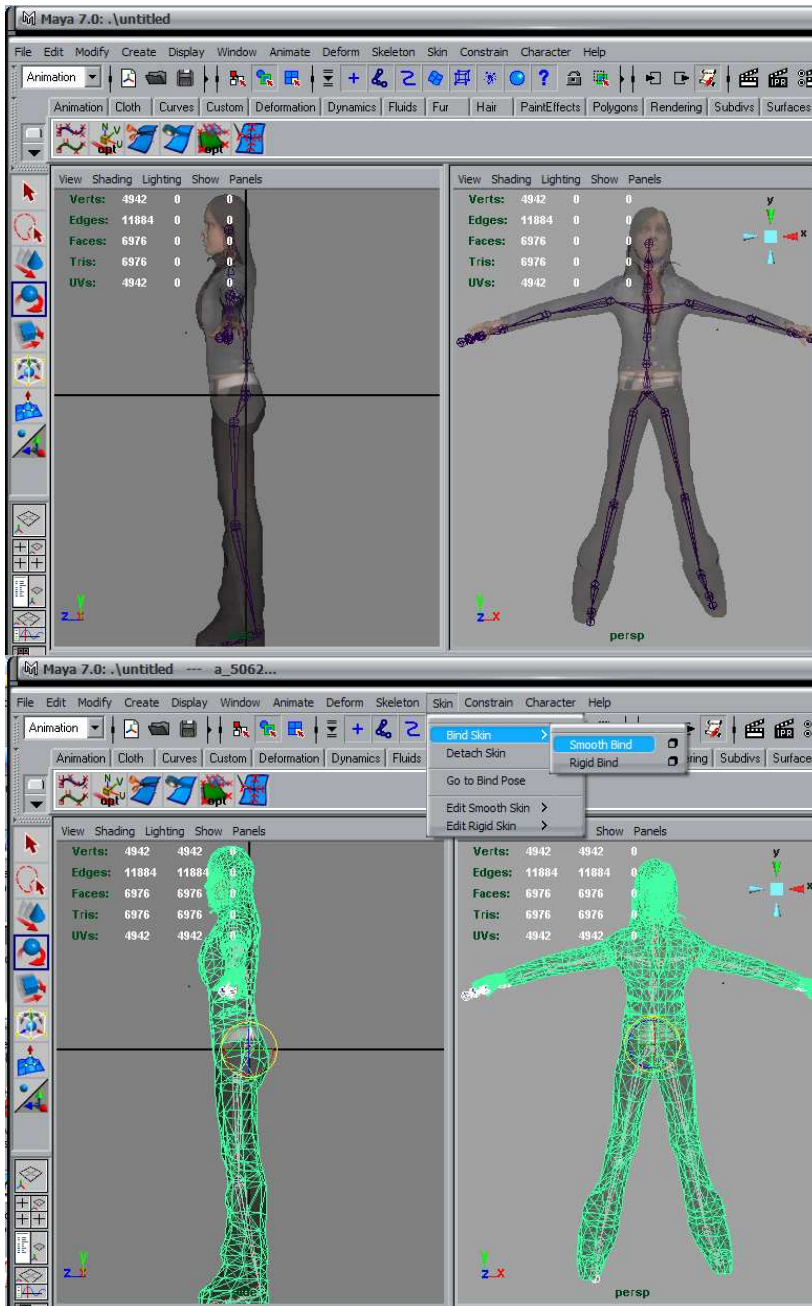
In Maya, open import\_skeleton-22



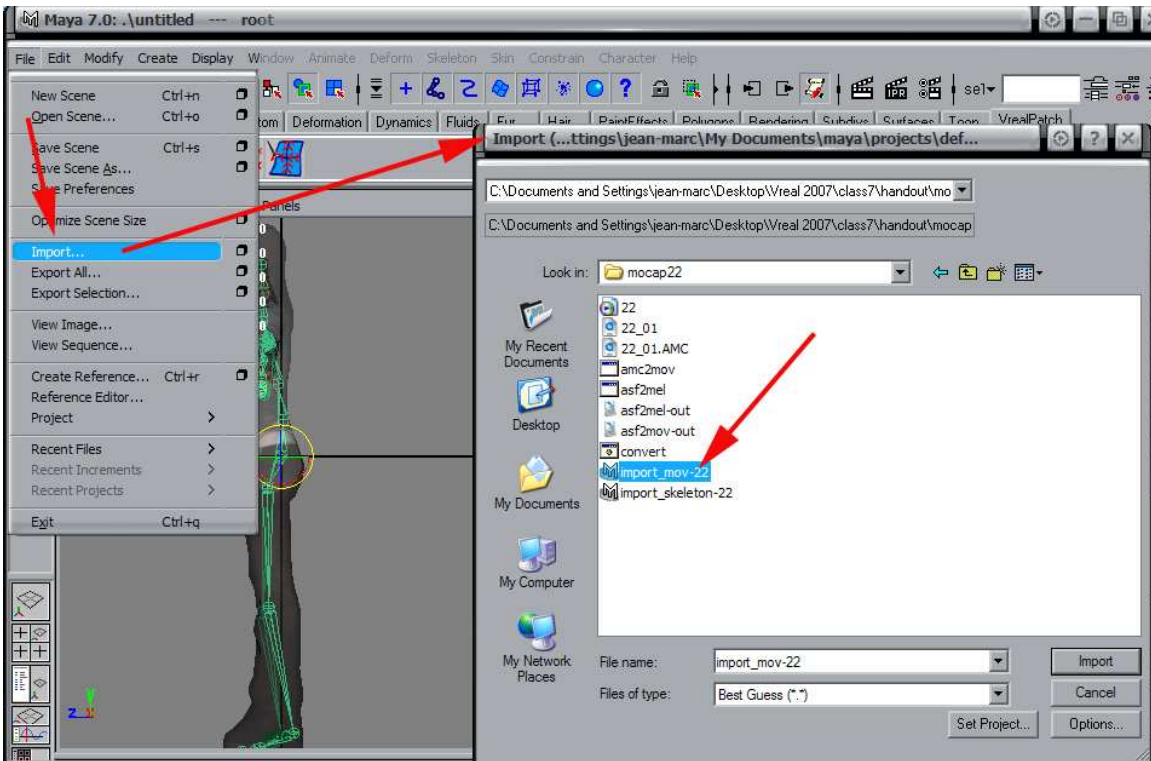
Resize the joints if needed.



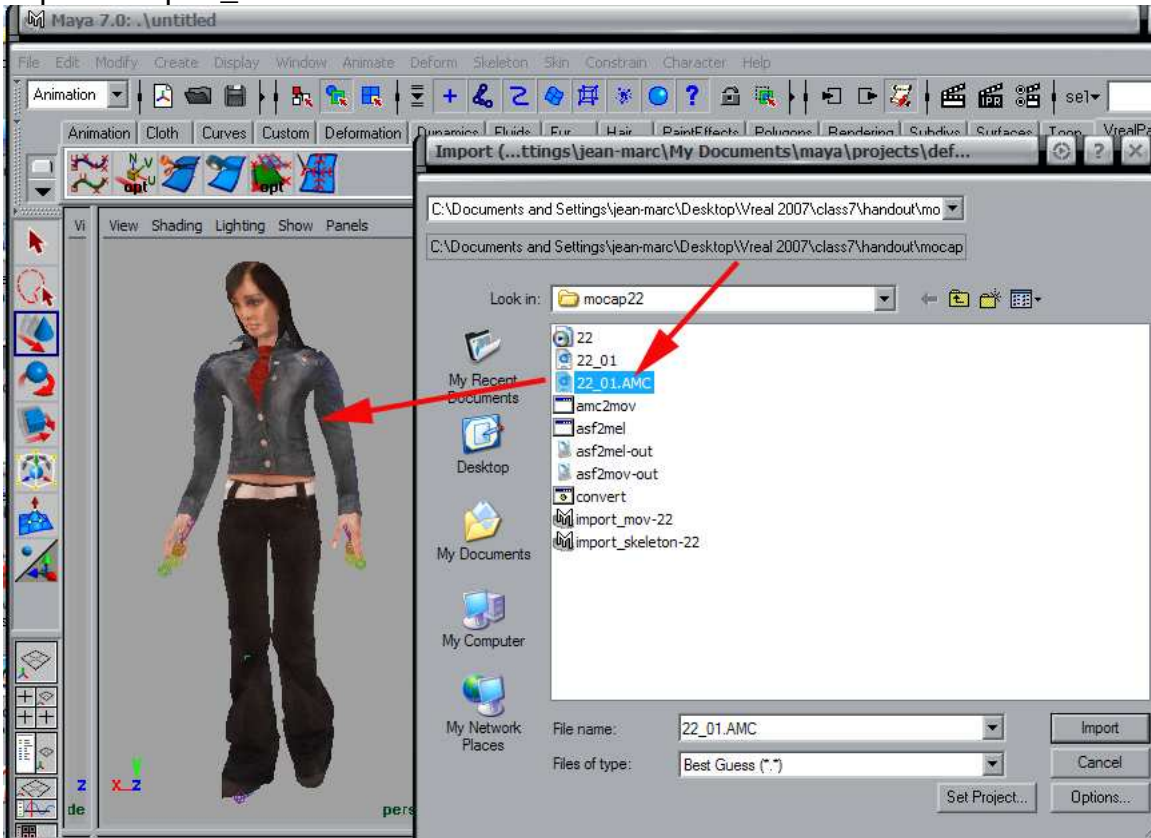
File > Import, select the mesh of the character created in Maya. Resize the mesh. You can rotate the skeleton in order to fit nicely inside the mesh. Please note **DO NOT MOVE** or **SCALE** the skeleton. This can affect the motions applied to the skeleton.



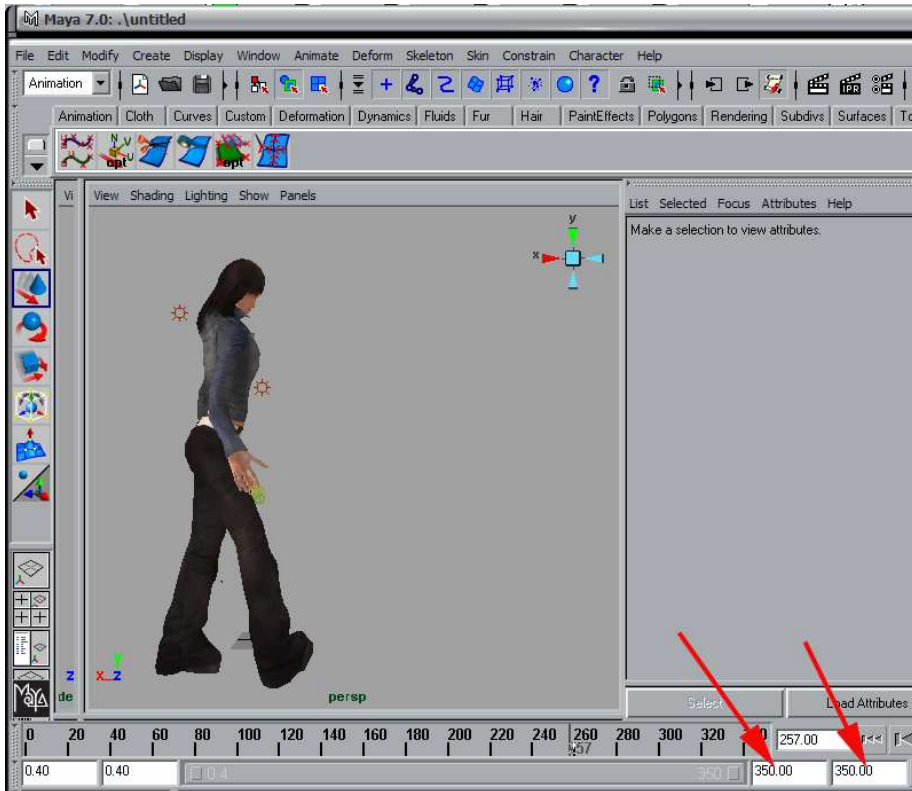
Go to Animation > Bind Skin > Smooth Bind. You may also need to paint weight maps around the upper arms joints. Go to Animation > Edit Smooth Skin > Paint Skin Weight Tools



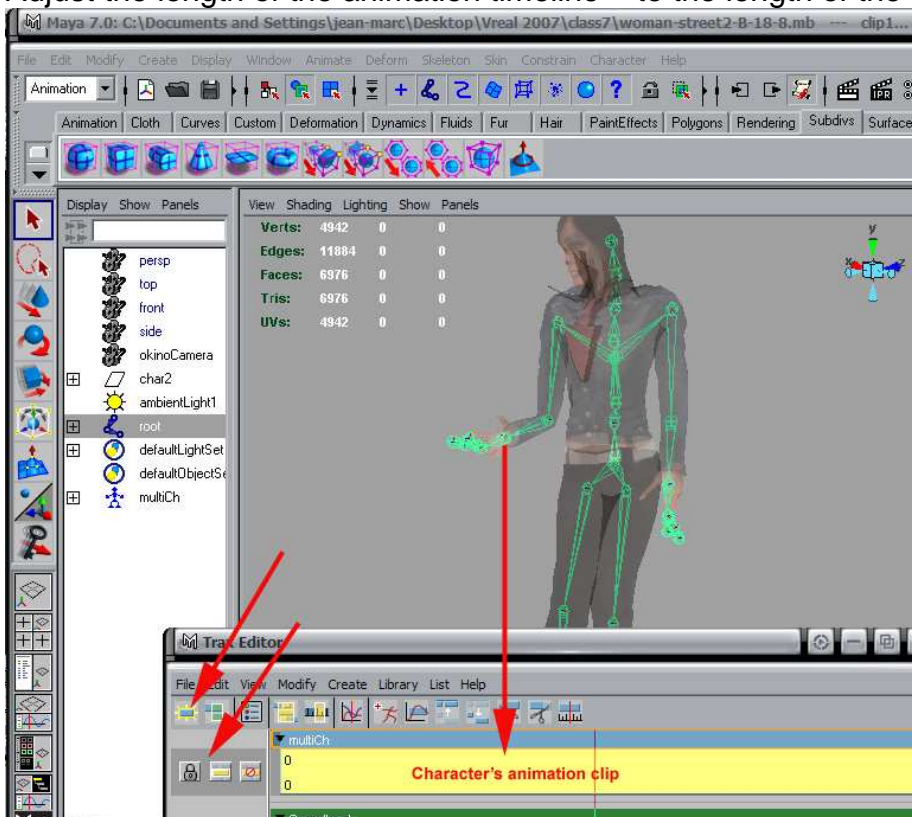
Import > import\_mov-22



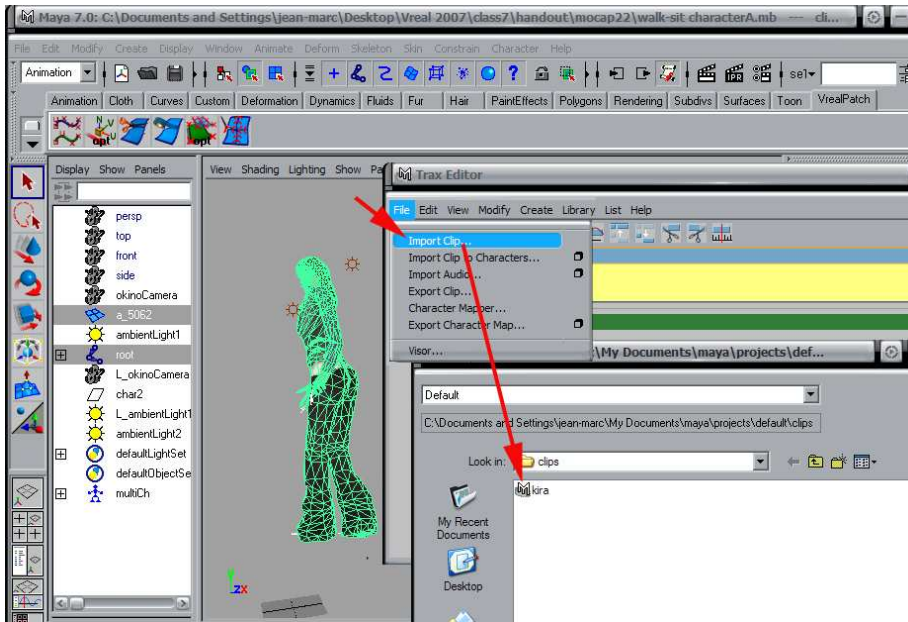
In the second pop up window, select 22\_01.AMC



Adjust the length of the animation timeline = to the length of the motion file



Go to Windows > Animation Editors > Trax Editor, select the character, Create the character's animation clip.



You can export the motion clip and save as a Maya .ma file inside the project > clips folder or in the Visor folder.

You can import a motion clip and edit several motion clips together. For example, blending animations.

