

ACA_MariuszK_1805456

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The blog can be found here: <https://mkalasz31.wixsite.com/my-site-2>

All Animations and the Blend file can be found here:

<https://drive.google.com/drive/folders/1v08LHNrzCIMO7CU11ruRimaCFEtyDrLk?usp=sharing>

Below will be the transcript from the website some things will not make sense as they refer to media which won't be included here.

1 Animation

Blog

This is the blog for Advanced Character animation module made by Mariusz Kalasz

Animated in Blender

Model made by Doink on Sketchfab: <https://sketchfab.com/3d-models/cyberpunk-robot-7f49cfa1aeb043aba44bb96b72cd9160>

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07/12/2021 - 09/12/2021

1

Animating a Walk Cycles and Emotes

This is the part where I do the animation, instead of doing the same walk cycle for 20 seconds there are different versions of it, this will act as more of a study to see what works well and what does not. Additionally, this section will show the Emotes of the character, by emotes I mean emotions and random stuff, the plan did say I would do a shock emotion but I decided to go for an annoyed one instead.

Below is the first iteration of the animation, the whole mood of it fits well with my idea, however it is stiff at times and the bounce of it is a bit too quick, so to improve on that I think adding some slack in the hand area and maybe add a frame in between so the bounce is a bit more prolonged.

This is the second iteration of the animation, this is just a more improved version of the previous one, in this one there is more movement in the hands and they kind of act like they are limper, additionally, I also have added subtle shoulder movement so they are less static. In the legs, they go a bit outwards so they don't rub/phase through each other.

The animation below is more looking into the more emotive walk, in this case, the character is annoyed so I wanted to make more of a stompy walk, the character is stiffer and is leaning a bit more forward. The hands are also clenched into fists and are a bit more angled so the fists are pointing outwards, this was done to show more of a feminine feel to it. However, timing is still off and I need to improve my understanding of it and how to edit timing graphs.

Here on the left is an emote of the character being annoyed, I tried to make the timing snappier when they stop their foot so it has more force, however, this kind of succeeded and failed at the same time, as it was quick but it did not have the impact I wanted.

I have additionally also added a bit of a vibration to the arms so it looks like the muscles are strained.

This animation was done just for fun, I wanted to recreate a dance from Warframe (a game made by Digital Extremes), the dance is called Pendulum Narta, and it worked out very well, in my opinion, it's a smooth dance and you can feel the rhythm of it.

This video has helped me in the technical side of animation and how to set up the timing, however I am still confused about it and how the graphs work. The video is by CG Geek.

This video made by Kevin Parry (uploaded by 3h4k on youtube) helped me in actually doing the animation as his walks when moved frame by frame clearly show the contact and passing poses same with any needed frame in between, additionally his over-exaggerated movement helped as well.

This is the video which I used as reference to the Dance animation, this video was recorded by me and this is my copy of the game.

06/12/2021

Planning and Background Info

The main idea for this animation is to make a walk cycle that portrays the character and personality well, and additionally try to animation an expression of a shock to try and understand how to animate an emotion without any facial expressions.

This is a rough plan for my animation, it mainly consists of basics and how the character will walk by descriptions, it would be probably much better if I would draw some of the frames with more in-depth movement, however that is a bit far from my current abilities. Each step will take 14-16 frames. The overall personality I want to portray is upbeat but gentle.

Below the Walking animation is a rough storyboard of an expression animation, the emotion is of shock or getting startled/scared. The storyboard explains the movement and what kind of action the character will take, the only thing which I will need to do is to understand what kind of timing I will need to do so it looks more natural, or it does not go too quick.

The video in question was made by Alan Becker (AlanBeckerTutorials on youtube) which is a short video covering how to set up a walk cycle and make it more believable/realistic. So, I have decided to make the main frames first which are called "Contact" and "Passing", Contact frame is where the feet contact the floor and the Passing frames are used to indicate the switch of the legs, and then do the "Down" and "Up" frames in-between. The general rule for them is that the Down frame is always after the Contact frame and the Up frame is after the Passing frame, additionally these frames do give more of a realistic movement, as it gives a slight bob.

These are some instructions/explanations made by my Lecturer, this did help me out as it made it easier to understand how to do the walk cycle, also this information is close to what the video went through. He also gives me ideas of what I should concentrate on like curves and rotation, so the animation is less linear and shows more character.

05/12/2021

Rigging of the model

First, I had to re-rig the character as the model was weirdly rigged and would make animating it more difficult (the bones were not connected in a traditional skeleton)

Firstly, when I first loaded the model into blender its transformations did not fit with the blender's so the model became a grey blob, to solve this I had to reset all transformations by highlighting everything in pose mode and pressing Alt+G (Resets Transformation) Alt+S (Resets Scale) and Alt+R (Resets Rotation). The before and after is below:

The skeleton here ¹ is not bad, but for my use, it needs to go, so after the resetting, I deleted the Armature and used an inbuilt feature of Blender called Rigify. So instead of remaking the entire skeleton, I used a Rigify skeleton which looks like this:

This skeleton is more human-like but certain areas are not needed like the face bones, so those got removed and then the skeleton had to be scaled up to the model, so it roughly fits.

After that, some minor adjustments were needed to be done so the bones fit perfectly into the model.

¹ Below is the end result:

From here I can generate the rig, this had an issue, however. Due to my minor adjustment, some bones got out of the line with each other (in this case it was spine.004 which is where the neck meets with the chest), to fix that I had to move the cursor to the bone and then use the snap to feature so it snaps to the cursor, this fixed my issues, and it then generated the rig correctly.

The cursor is the white and red crosshair, and the arrow is pointing at the bone which was out of line.

¹ And here is the complete rig, in this screenshot the rig has already been parented to the model so it can control the model. Some quick points about what the colours mean; yellow is the general control of the character so I can control the upper and lower body via those, the red arrows and areas are for moving the arms and legs, blue areas are for more minor adjustments same with green on the fingers and the orange lines are for full finger control.

Above is the video tutorial I followed made by Russell Midfield, this video really helped in understanding rigging and how to enable Rigify in Blender. Also, it gave me a good reference of how the bones should be set up.

02/12/2021

Texturing

Due to how Blender imports models some of the textures broke and I had to re-apply them.

This was pretty simple except for enabling the transparent textures (and that was just enabling a setting for the material). The texturing itself is very close to how unreal works so I had more of an understanding of how it works. The model came with the textures and all of them were well-named so it was just connecting those to their respective areas.

This is the interface for texturing, you just attach the images to their respective areas, so metallic to metallic, base colour to base colour. The only different one is the normal which first needed to be transferred into a vector so it actually works.

This was figured out mainly with trial and error.

And here is the final product. The transparent texture for the visor was enabled by selecting the Alpha Hashed option under blend. I would use Alpha Blend as it would result in more smooth transparency however it did not make the visor fully transparent. (Alpha Hashed makes it transparent at the cost of smoothness)

Bibliography

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