Search for a Star

DEIANIRA, BRINGER OF NIGHT

MARTHA HORSFIELD

https://www.artstation.com/marhorsfield
martyhorsfield@gmail.com

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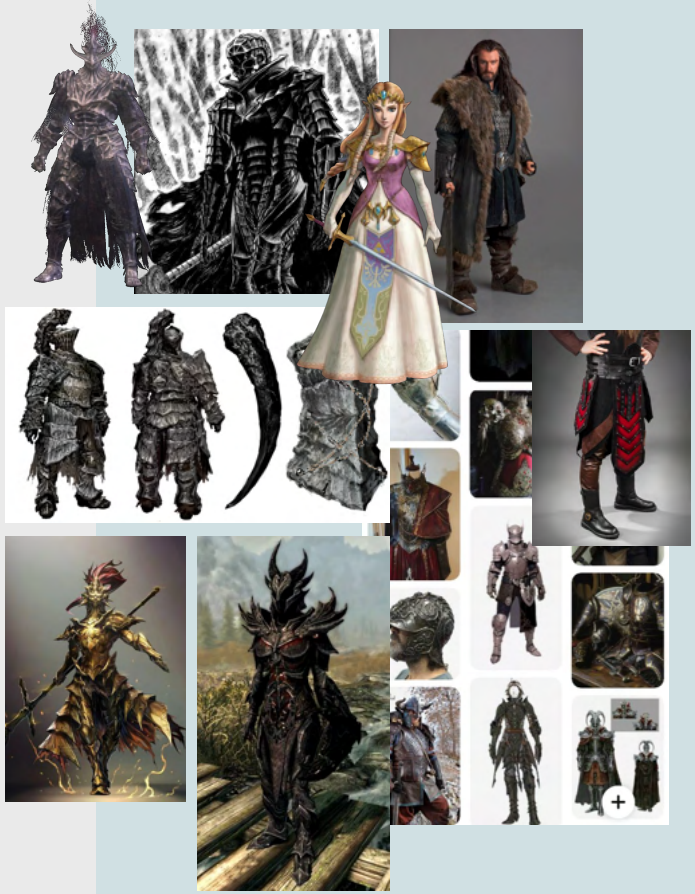
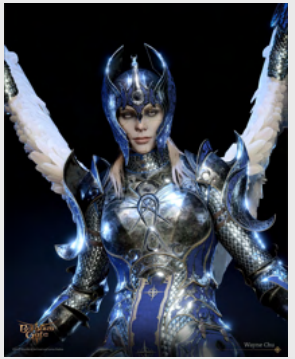
INITIAL IDEA + IMAGERY

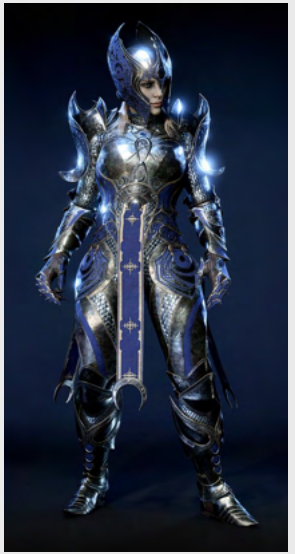


The initial idea for my character was based on the characterisation of death. Researching the Christian ‘angel of death’ who transported souls to the afterlife, and is sometimes synonymous with death itself. Named Azrael, his Ancient Greek counterpart, Thanatos, explore similar themes of being transported to another life after death. In Christianity, this is Heaven or Hell, but in Ancient Greek, is the Underworld, ruled by Hades, God of the Dead. In mythology, Hades is portrayed as passive rather than negatively, but is cold and stern, holding all accountable to his laws. This idea was the basis of my character - a god-like warrior whose duty it is to take life when the time is right. She views her culling not as villainy, but simply what must be done. As for art style, I was heavily influenced by both Elden ring and Baldur’s Gate 3.

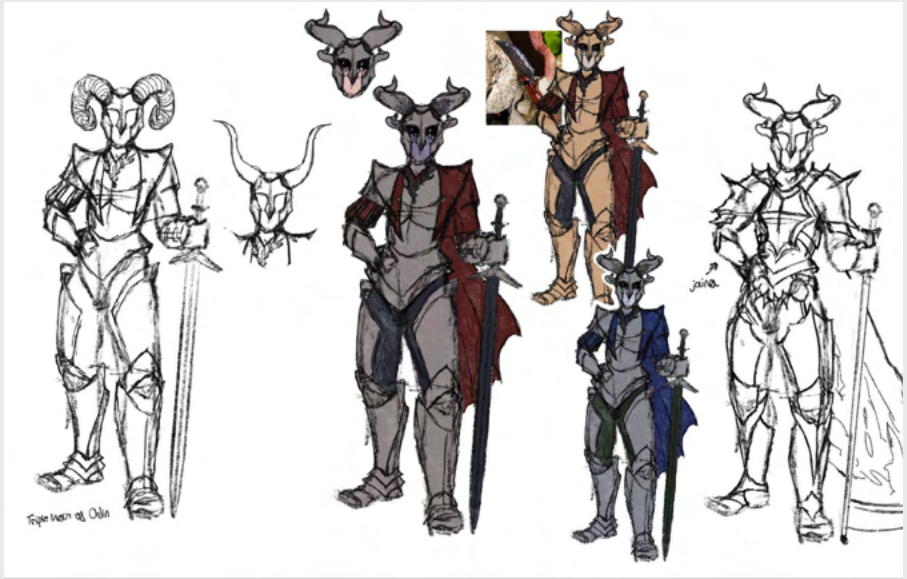
Hoslow - Elden Ring

Dame Aylin - Baldur’s Gate 3

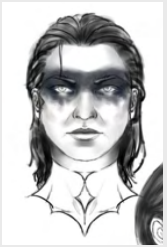


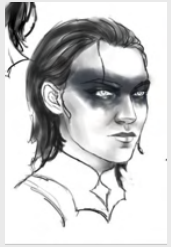


INITIAL CONCEPT



The imagery I looked at when sketching my first ideas included the symbol of Hades, God of the Underworld in Ancient Greece, as well as the skull, hood, and scythe of the traditional Grim Reaper.





I also looked at demonic imagery, particularly Satan, or Lucifer in Christianity, who is often portrayed as a ‘fallen angel’, or with the horned head of a goat. Adding my own twist on this, I wanted my character to be an armoured warrior woman, who would symbolise death and the afterlife for those she had killed. The moon, similar to that in Hades’ symbol, along with stars, were used throughout my design, as a connection to the idea of heaven, and ascending or leaving earth after death.

FEEDBACK/ REDESIGN

After receiving feedback from my tutor, the main things I wanted to work on were:
Refining the imagery, including the grim reaper/death look, and the links to the afterlife through the symbols of Hades and the heavens/moon and stars, and the traditional cloaked look. Removing some of the makeup was also suggested, so she looked more skull-esque and less like she was wearing a mask. I also considered the weighting of the weapon, as I wanted the scythe shape, but still to have it match the heavy armour of a warrior type character.

09/12/23-12/12/23

SCHEDULE

Since this project is not part of my FMP Uni work, I worked on it almost exclusively in my spare time, meaning I had just over 6 weeks to work on it - 4 weeks of my christmas break, and 2 in term time. This meant that balancing my time is vital to the project being completed. Thus I split my project into week by week chunks with smaller goals.

Block 1 : 8th-12th - Conceptualise Idea, Initial Sketches, Get feedback, Final design ready to start modelling, Plan project schedule

Block 2 : 12th-23/24th - Beginning stages: Low Poly sculpt, Marvellous Designer Clothing, Groom,

Christmas

Block 3 : 27th-31st - High Poly, sculpt and details - Head, Trousers/Shirts, Shoulder/Bracer, Torso Armour, Thigh/calf/boot, Belt/Gloves/Cloths/Neck-piece/Thigh-straps

Block 4 : 1st-8th - Finish High Poly, UVs, Baking

Block 5 :11th-15th - Texturing

Block 6 : 15th-20th - Rig, Pose, Setup UnrealEngine Scene, Render final images, Finish PDF for submission

Submission on Jan 20th

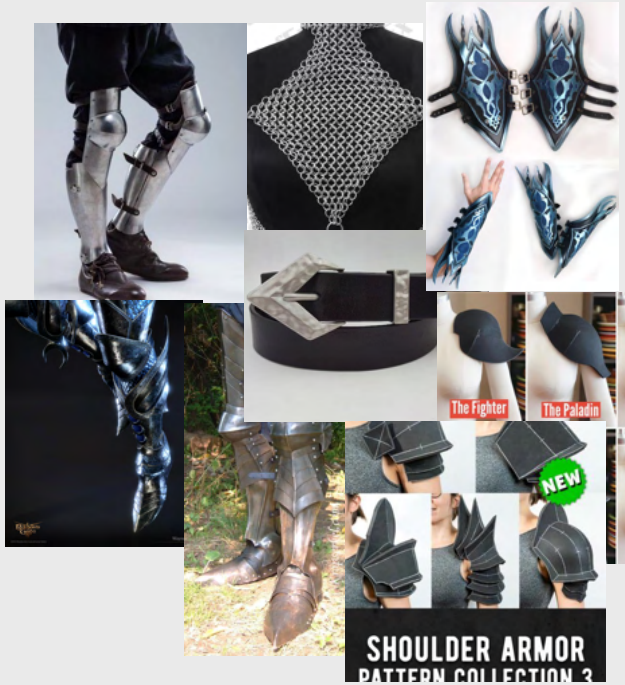
Editors note: This went out the window when I got ill :(

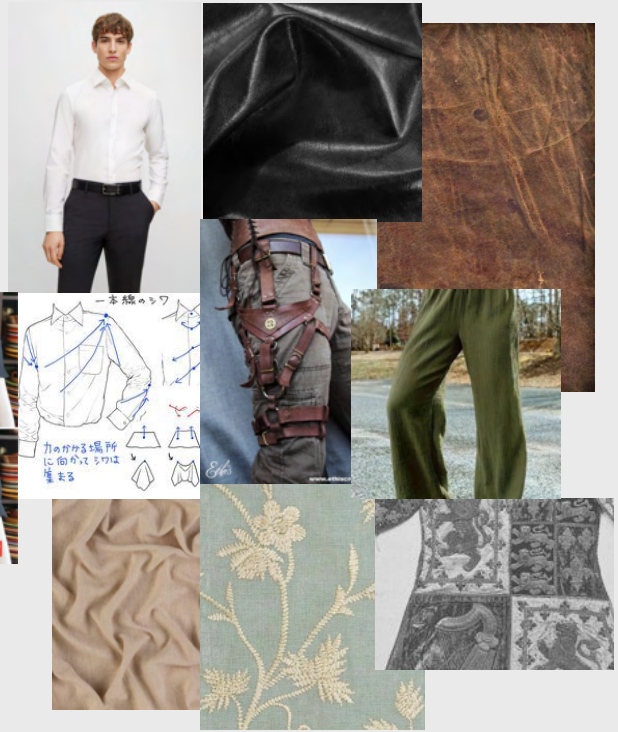
09/12/23-12/12/23

REFERENCES

Using references was an important part of being able to match the style I was aiming for while still keeping every element accurate to life. I collected references as I went, sorting them by category for easier and more efficient use.

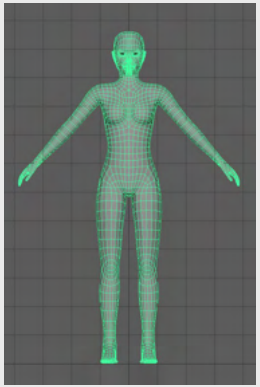
Head/Face | Hair | Leg Armour | Torso Armour | Arm Armour | Clothing | Fabric Bank

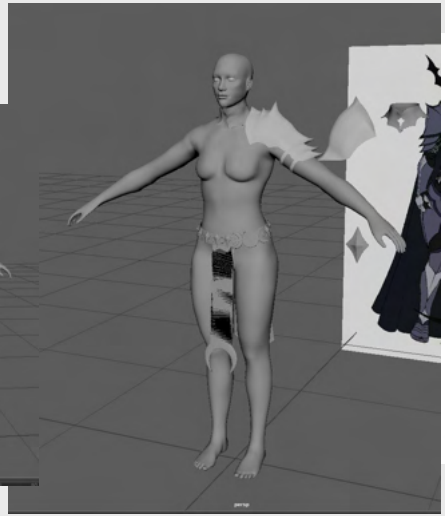


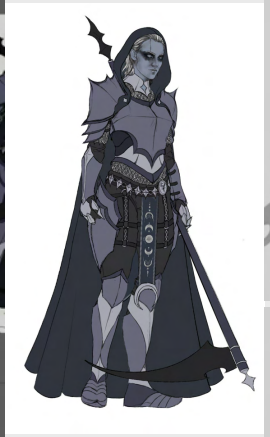


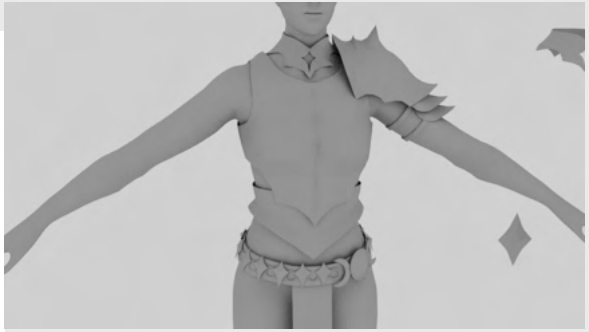
09/12/23-12/12/23

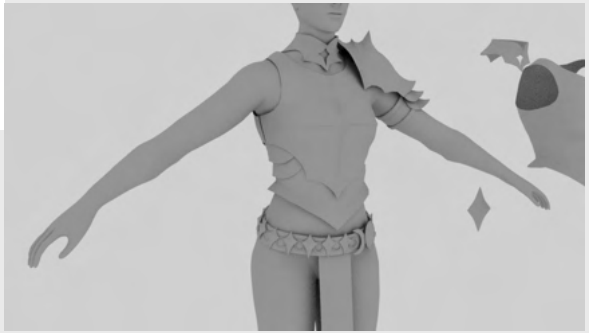
LOW POLY I

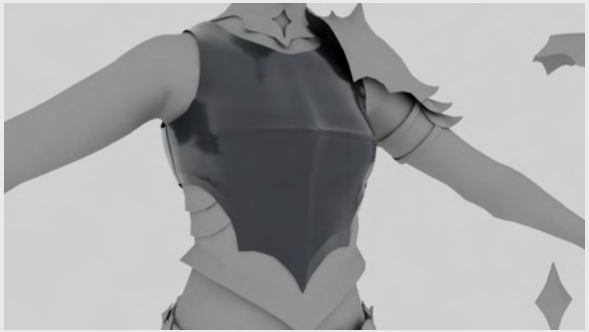






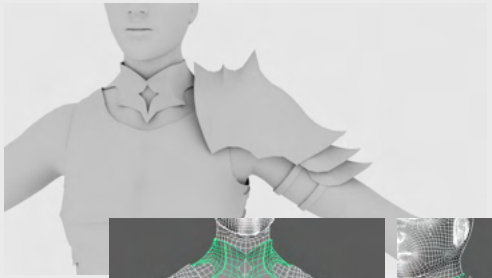




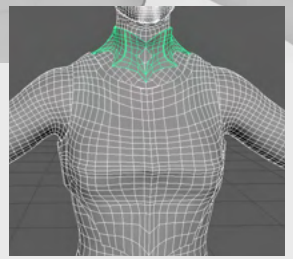


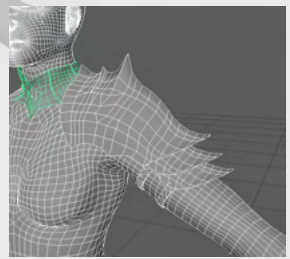
I started by using a low poly character that I had made previously, subdividing it and editing it to be more realistic, for the style I was going for. The body was just to be used as a base, allowing me to build clothing and armour on top of it, so would be deleted later. Using the Arnold render view allowed me to check the model as I went, as well as how some of the shapes like the pointed breastplate would look in a metal texture.

Aim - <100K tris



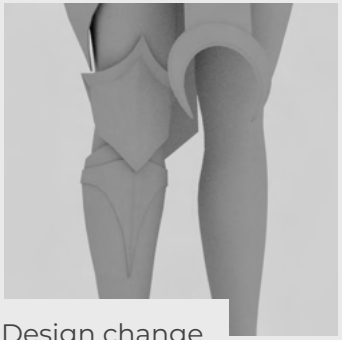
Before polygon cleanup

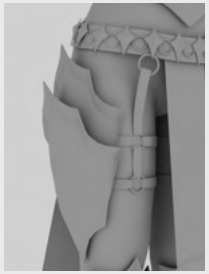


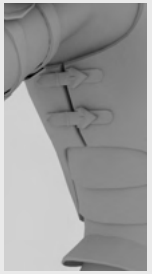


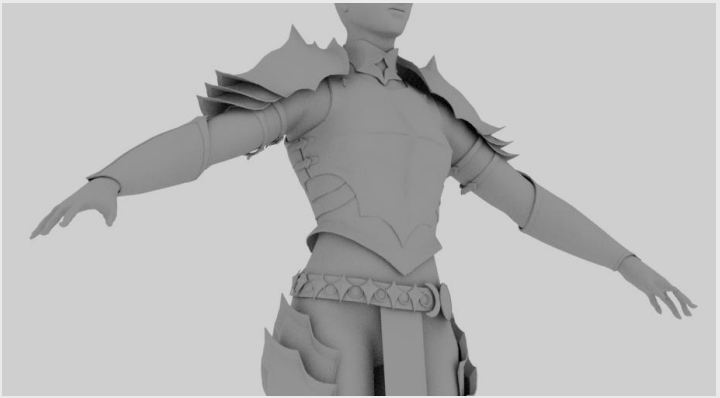
LOW POLY II

Following the breastplate, I worked on the leg armour, and the smaller details.

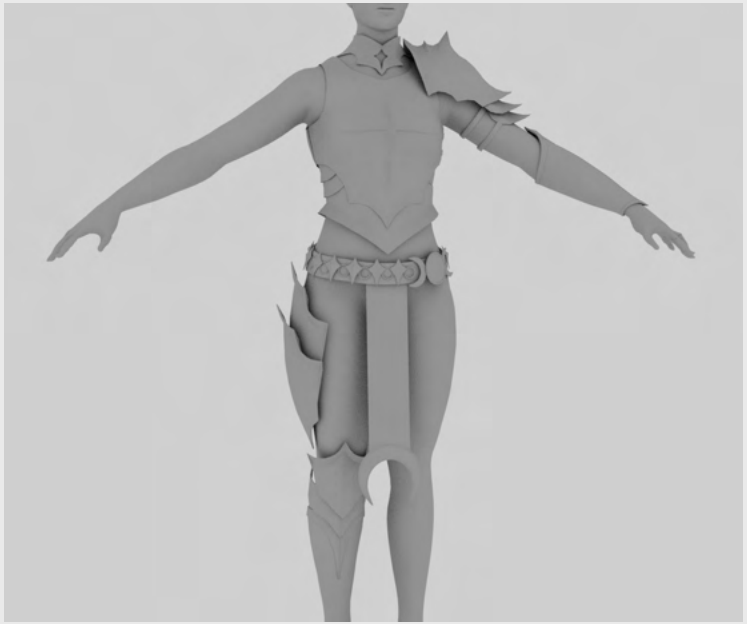








Design change

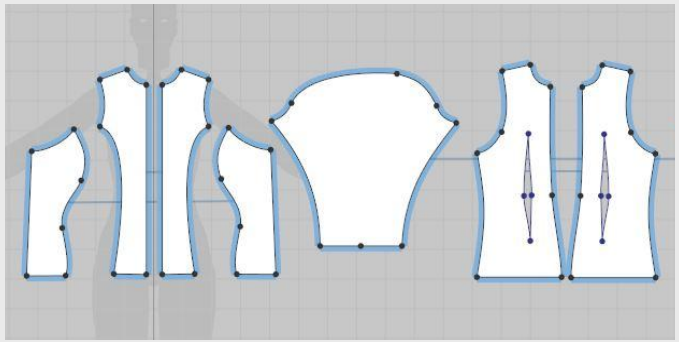


Some smaller elements would be added in Zbrush, but things that I wanted to have more dimension, such as the straps and buckles, were added to the Low-Poly model.

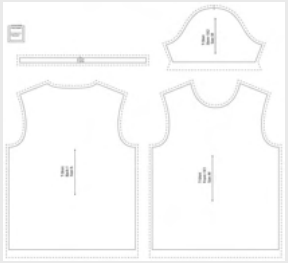
12/12/23-18/12/23

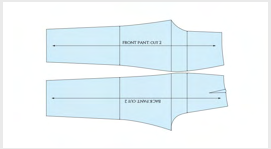
CLOTHING - MARVELLOUS DESIGNER

Since I wanted realistic clothing folds, I decided to work from High to Low Poly. Not having used Marvellous Designer before, I followed the pipeline shown here :
https://www.youtube.com/watch?v=o_Q-N8CoyCU

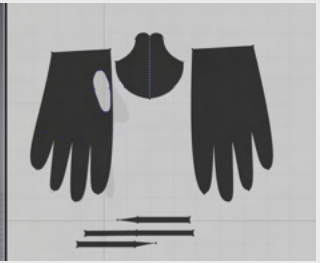


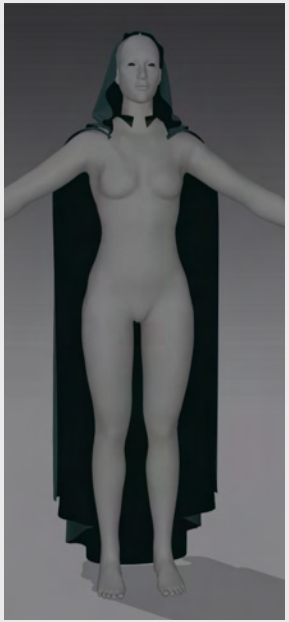
Having a sewing background definitely helped me here, as I have a basic knowledge on how clothing patterns and fabric manipulation work. I used a basic shirt and trousers pattern and adjusted it to fit my needs. Knowing that it would need to fit inside the breastplate, bracers and boots, I made the sleeves and legs shorter, and tighter around the bottom. The sleeves also had a cuff where the bracers would start, to give the natural wrinkling of the fabric being pinched in.





CLOTHING II - MARVELLOUS DESIGNER



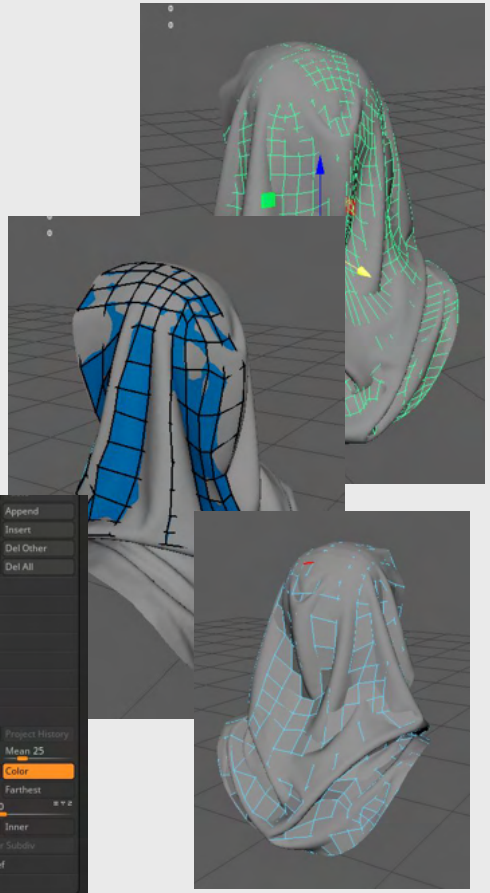


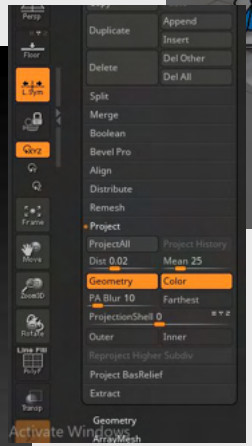
For the cloak, I used a basic half circle pattern, which i tacked to the model where I knew the pins would sit. I changed the angles of the pattern so that it folded over the shoulders underneath the armour, giving it a full appearance while being easier to rig. The Hood began as a circle cut in half, which I adjusted to fold how I wanted it to. The necklines of both were adjusted to give the crescent moon cut out in the back, which I could clean up later in ZBrush.

Making the gloves, I used a basic glove pattern, which I also referenced later when adding the high-poly detail stitching. I changed the thickness of the fabric in the engine to give it a smoother leather-like look, and also made use of the tacks to pin the fabric to the model, creating folds exactly where i wanted them, such as in the creases of the fingers.

CLOTHING RETOPOLOGY

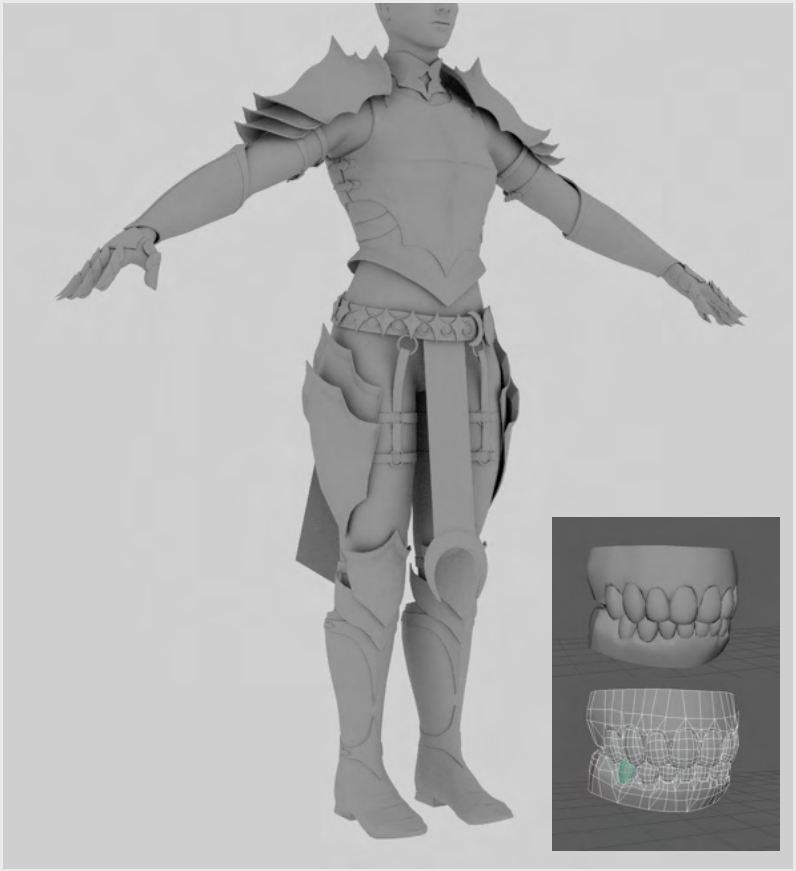
I used two different techniques to retopologise my model - one for the shirt, trousers and gloves, and another for the hood and cloak. For the clothing, I used the base mesh I had made for the body, with the high poly shirt/trousers/gloves, and used the Projection feature in ZBrush to quickly adjust the shape of the mesh. I then manually cleaned up any edges that didn't look correct.
For the hood and cloak I used the Retopology tool in Maya, to manually create polygons that fitted the shapes of the high poly meshes. One issue I had here was that the cloak had a lot of detailed folds and curves, which I decided to make using a dimensional object that surrounded the entire high poly mesh. This however led to the poly count of the cloak being very high, which was an issue that I did not have time to properly fix.

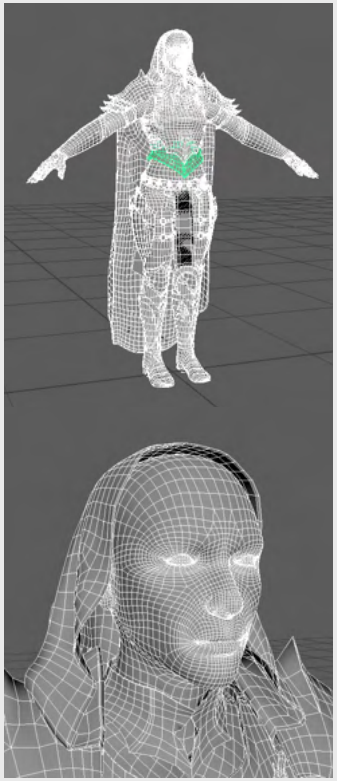




LOW POLY III

I would later work on the details like the face in ZBrush, so my main aim was to have the basic shapes and topology looking good. The under clothing was completed in Marvellous Designer, and I used XGen in Maya to create the hair cards.





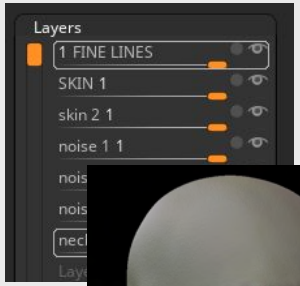
Final tri count: 95578
Without Hair: 82722

Without Cloak: 83832
Hair Only: 12856

HIGH POLY HEAD

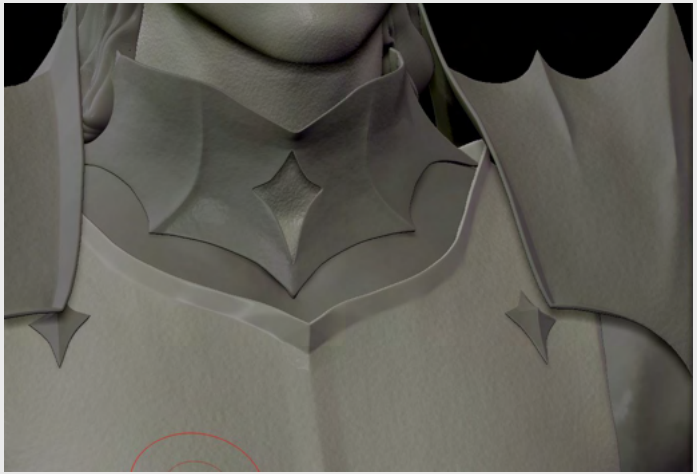
For the face I used reference of both human skin and the detailed skin of realistic characters in other games. I used noise masks to create the smaller detailed pores, and hand modelled larger dots, texture and wrinkles.
Constructing the eyes, I researched the eye layers giving me the eyeball itself, with the curved iris, cornea, with the eye shadows added, and the tear line.
https://www.youtube.com/watch?v=qqw1Z9JtkNI

Skin Reference - Abby TLOU

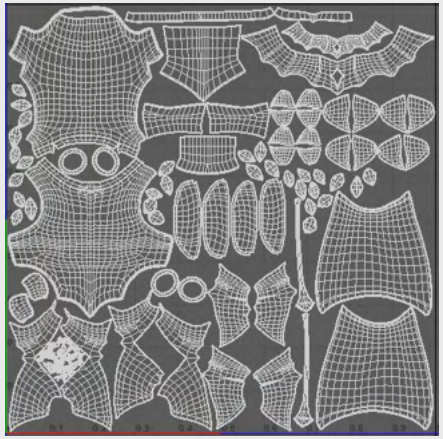
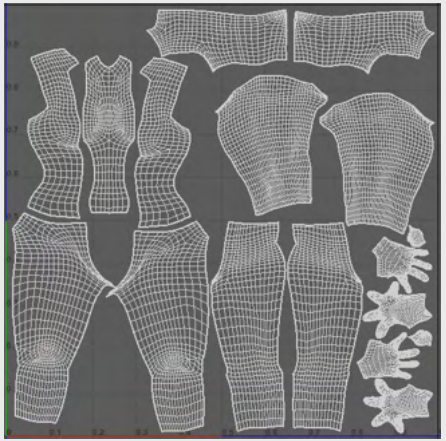
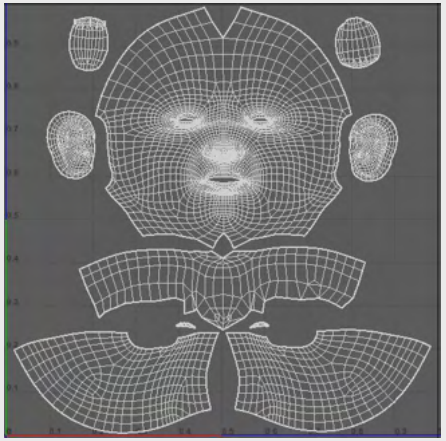
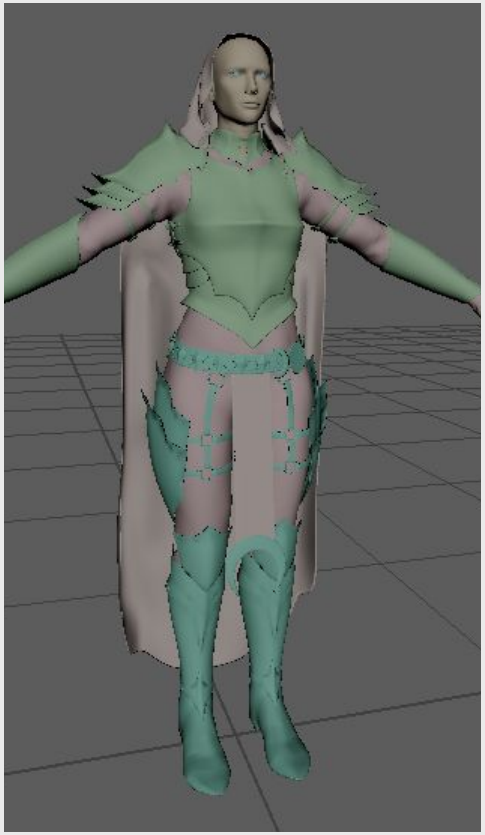


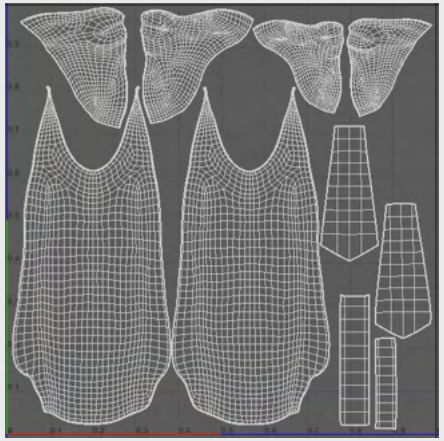
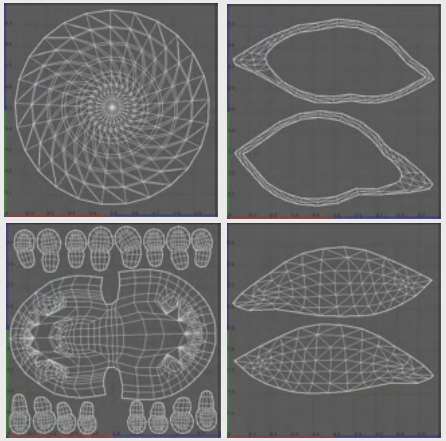
HIGH POLY ARMOUR

Working on the high- poly of the armour, I wanted to create the rough texture of hammered metal along the bulk of the large pieces, while preserving the smooth edge on the trims. I created a noise layer for each piece of armour, and masked off all the edges I wanted to keep smooth. I also used ZBrush to correct any folds in the clothing I didn't like, and make sure that it fit properly underneath the armour, which meant using the move tool to tuck the edges into the armour pieces. This worked well as it left the rest of the fabric overflowing the armour, as it would fold in real life. Unfortunately, due to the incredibly high poly count that I was working at, to get the details, the my PC was struggling to keep up, so I decided to continue the detailing of the armour and clothes in the texturing stage.



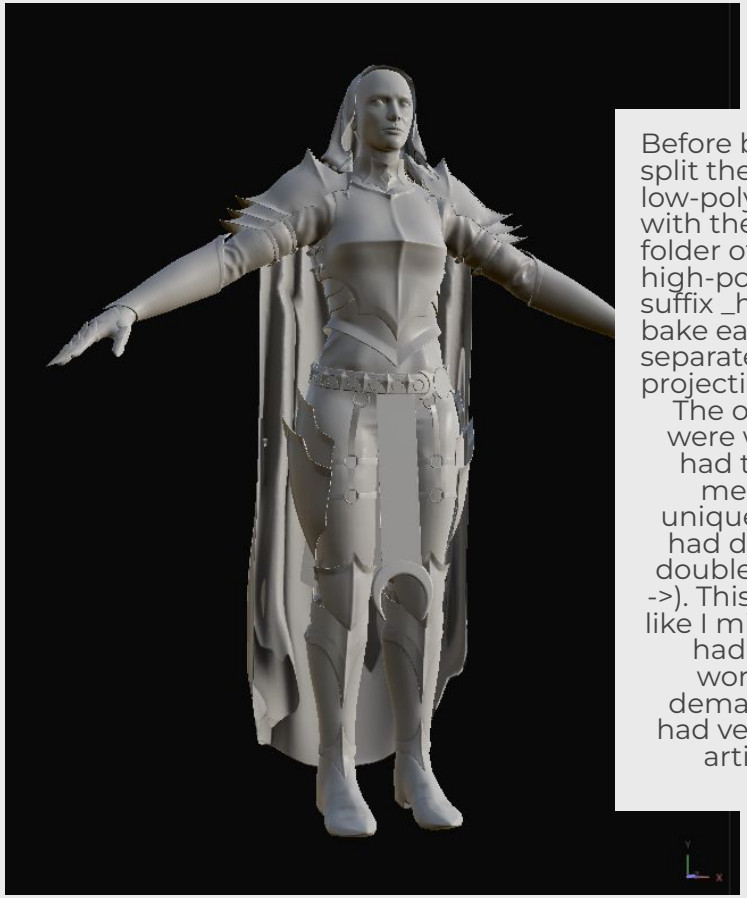
UVS

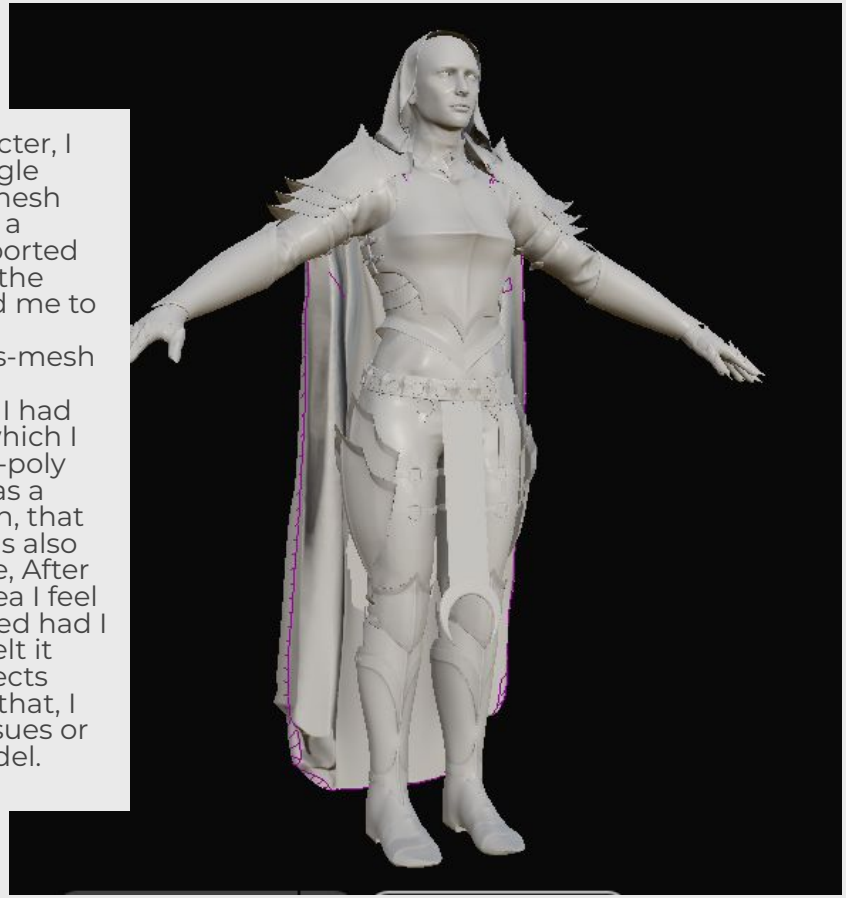
TEXTURE BAKING

It was around this time that I caught the winter flu, and lost about a week, putting me quite a bit behind schedule :) no panic!



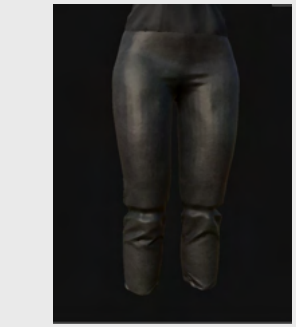
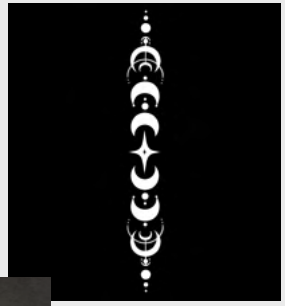
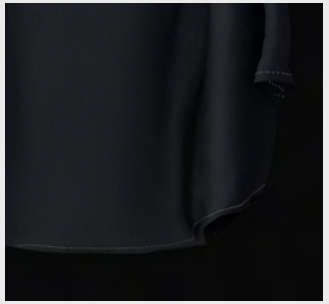
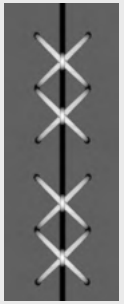
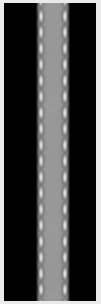
Before baking my character, I split the mesh into a single low-poly FBX file, each mesh with the suffix _low, and a folder of individually exported high-poly meshes, with the suffix _high. This allowed me to bake each texture set separately, without cross-mesh projection.

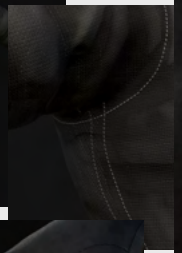
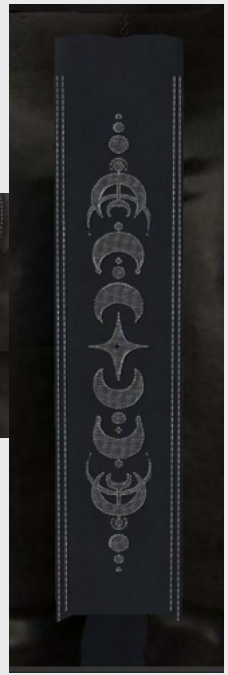
The only major issues I had were with the cloak, which I had to adjust the low-poly mesh for, since it was a uniquely detailed mesh, that had deep folds but was also double sided. (<- Before, After ->). This was the only area I feel like I might have changed had I had the time, but I felt it worked for this projects demands. Aside from that, I had very few baking issues or artifacts on the model.

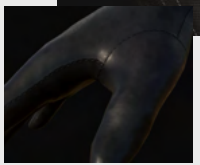
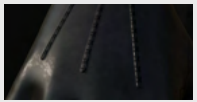


TEXTURING - CLOTHING

For the Clothing, I had four main elements - the gloves, shirt, trousers, cloak, and tabard.
All of the base fabrics were a simple base layer with different roughness applied and texture masks from the Library, to give their respective fabric textures.
The detail stitching on the trousers was done with an alpha mask, while those on the shirt sleeve, cloak, and edges of the tabard were using the stitch brush and a colour/height map.
The embroidery on the tabard was drawn in Procreate, based on some tattoo designs, and then imported as an alpha, which I then stamped onto the cloth. The shape was then used as a mask on a height map for the embroidery texture, and I hand drew out the edges of the stitching with the stitch brush.

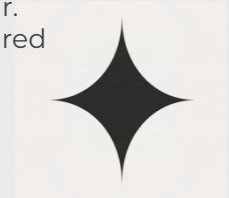






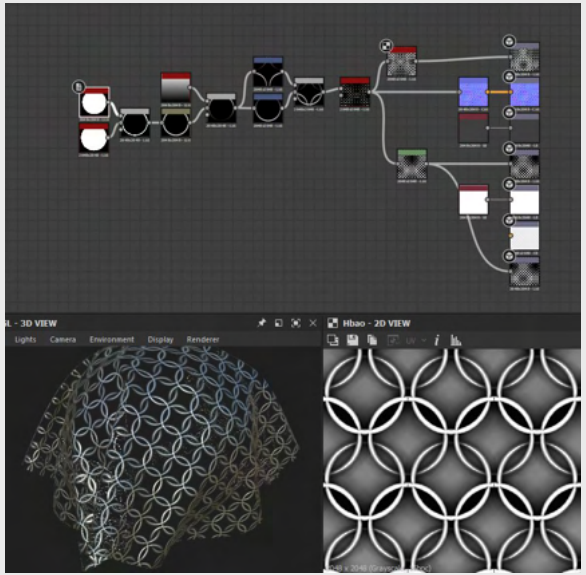




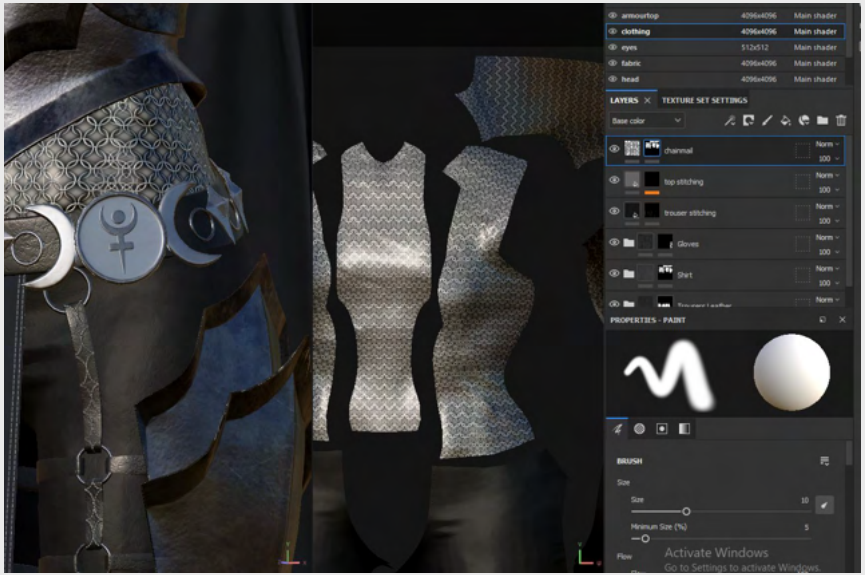
TEXTURING - CHAINMAIL

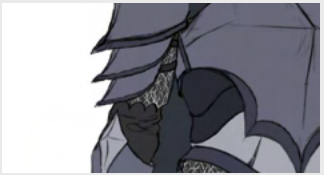
For the chainmail overlay, I made a texture in Substance Designer, following the pattern in my initial sketch. I wanted to make sure that the star shape between the rings was clearly visible, to follow the themes throughout the armour.
I made sure to add shading so that the rings appeared to be separated from each other.



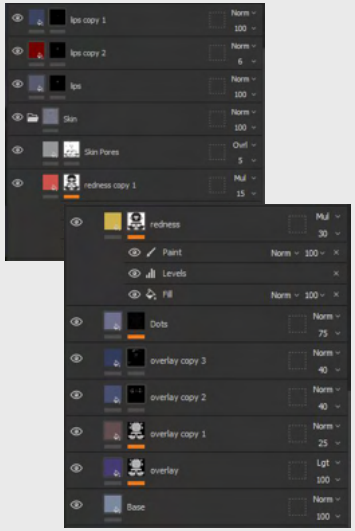
Once imported into Substance Painter, I changed the opacity so that the undershirt could be seen through the rings, preserving the texture. I used several layers for the different segments of the UVs, so that I could align the edge on the sleeves with the arm straps.
I then masked off the areas of the bottom of the sleeves so that the shape would match the pointed edge in my sketch. I also decided that the design worked better if the chain finished between the arm straps, leaving more of the sleeve uncovered, and giving some visual space between the armour pieces.

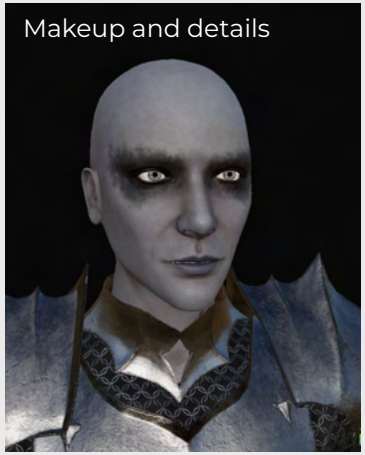


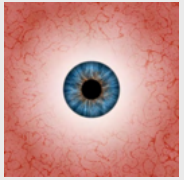


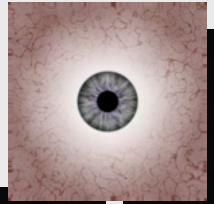


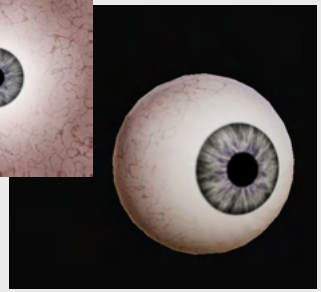
TEXTURING - HEAD



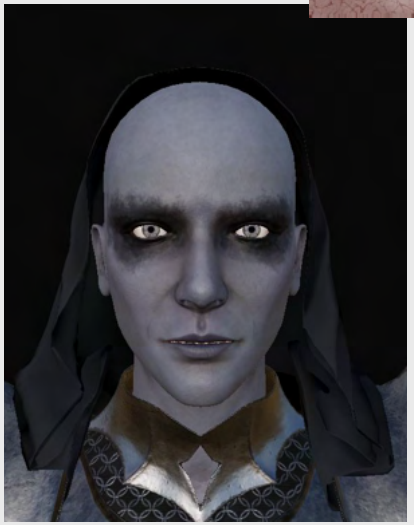


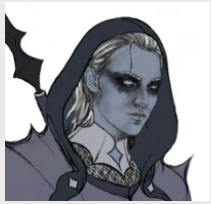


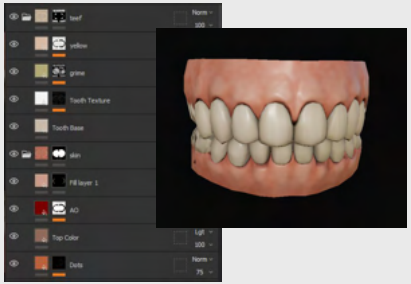




Base eye Texture by FilterForge (modified)

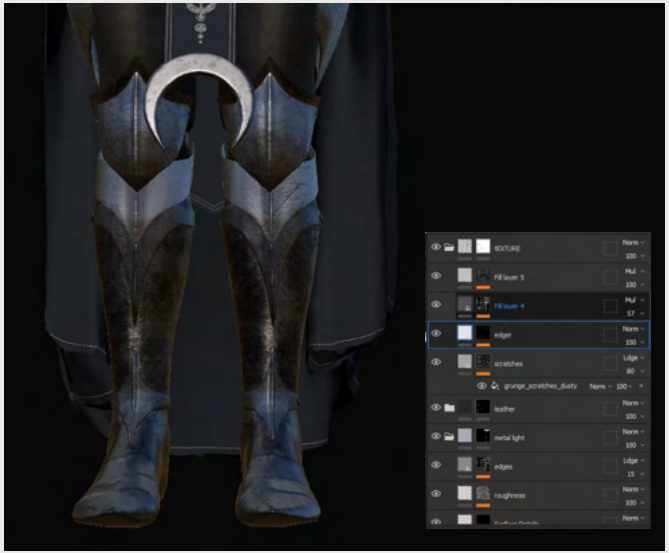




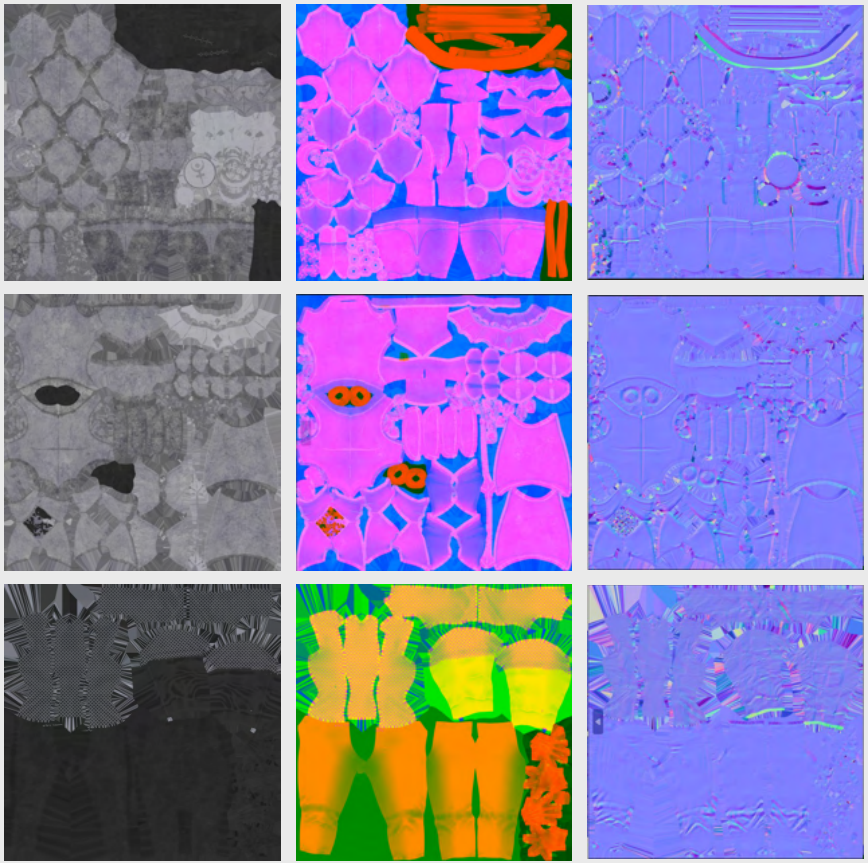


TEXTURING - ARMOUR

Texturing the metallic armour, I used three main base colours, which I adjusted the metalness of. Each colour metal was identical, just masked off in different areas, which made my texturing process a lot faster. I added a roughness layer to each, so that the shine in different areas could be easily controlled.
Over all of the metal layers, I also added several colours of grime layers, with a grime texture in the mask, found in the Substance Painter Library. Where I'd been unable to finish texturing in ZBrush I was also able to add some extra details, such as smaller scratches, and the damage around the edges of the armour. This was hand painted with a height brush, as well as some added with textures. I also added some details like the belt symbol, using alphas.



TEXTURE MAPS

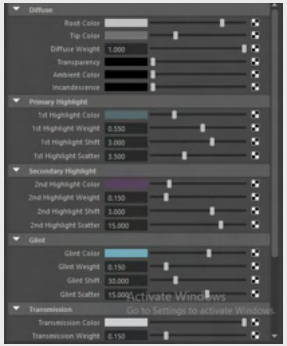


GROOM

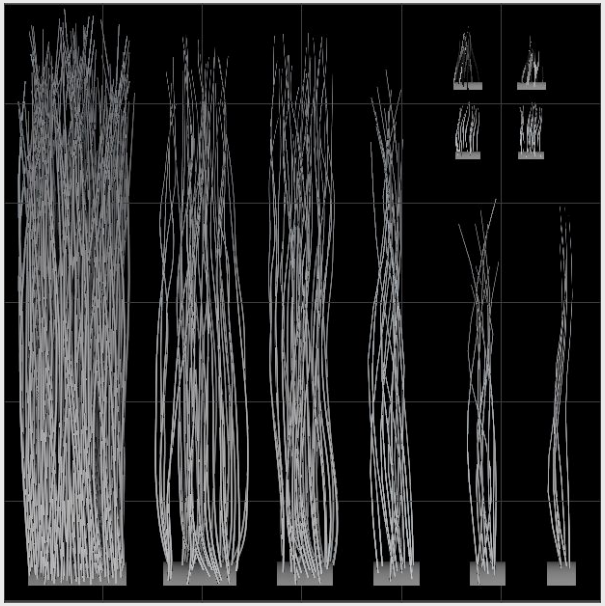
Not having modelled hair using hair cards before, I began researching the different options, and landed on using Maya's XGen to create the cards themselves, and then exporting the textures to another file where they could be hand placed.

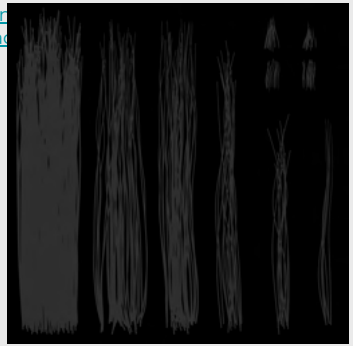
Resources used:

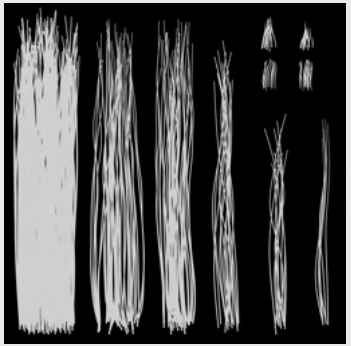
CGMA tutorial: https://www.youtube.com/watch?v=Z58OQ9x0E68&list=PLWVY6T1hda_i3ywcgaCc8jya-KJ-wmryd&index=35&t=2069s
Asif Nawaz Hair: https://www.youtube.com/watch?v=A4h9iSc-Ofk
3D mutiny tutorial: https://www.youtube.com/watch?v=aHhOXszawHA
TriGon Tutorial: https://www.youtube.com/watch?v=PoVmPVAO2m0&list=PLhphbo2gS6Vy5hAjadYLgXgTDVWlw2y4U&in
Marmoset sorceress character: https://marmoset.co/posts/presentation-lighting-and-hair-creation-for-a-sorceress-charac
UnrealEngine hair shader: https://docs.unrealengine.com/4.26/en-US/Resources/Showcases/PhotorealisticCharacter/

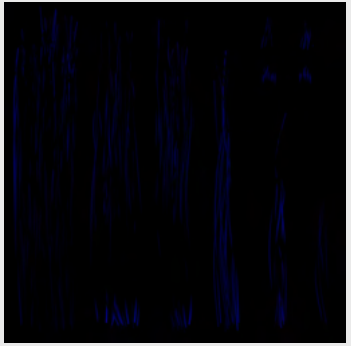


Hair References



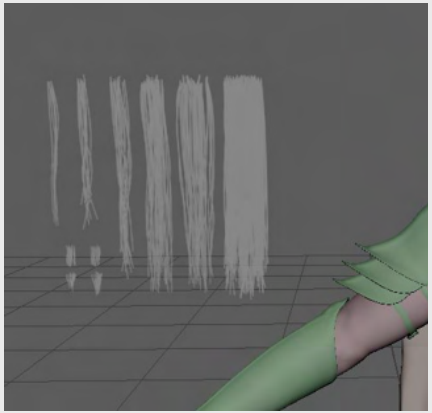


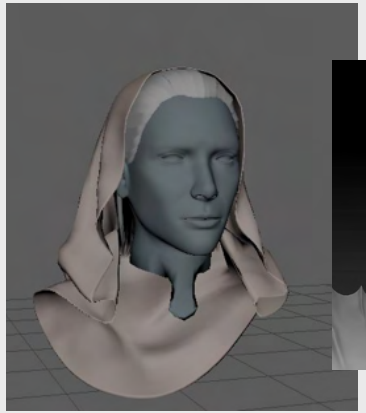


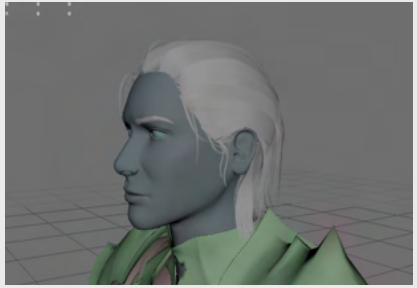


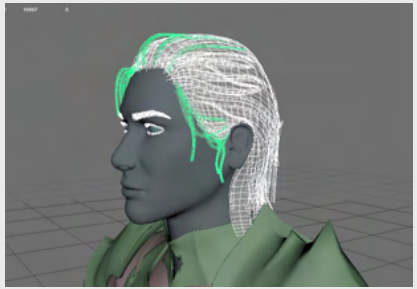
GROOM

Before starting the hair card creation, I made a quick blockout of the shape I wanted in Zbrush. This allowed me to see what I was aiming for as I went. I also had to be mindful that the hair wasn't passing through the hood, but still looked correct when the hood was toggled off. Once my hair cards were created, I imported the card's opacity map into a new file with my model, and used it to create my hair card UVs. I could then form hair chunks and lay the solid base of my hair, before building more layers and flyaway details on top. I found this quite challenging since it was my first time doing this process, but having reference both of real hair, and other game models, definitely made it easier. Choosing a hairstyle that wasn't too complicated also helped, and overall I was pretty happy with the result.







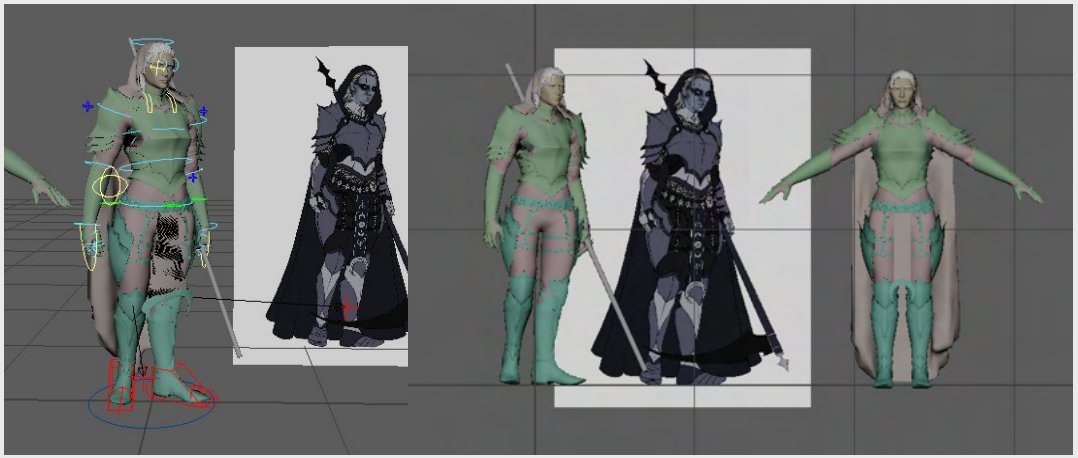


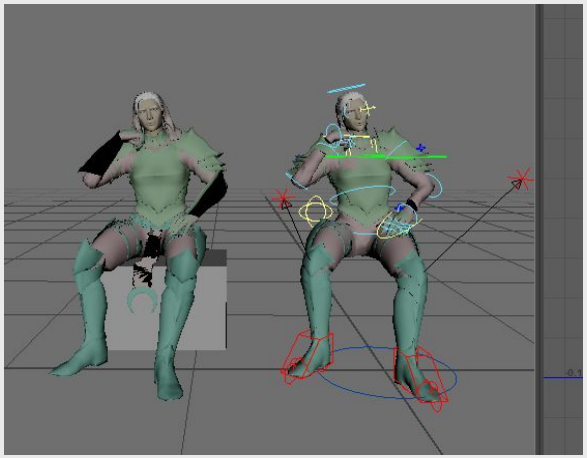
POSING

UNREAL ENGINE

To pose my character, I used the Maya advanced skeleton, which allowed me to rig and fully pose my model. I selected to match the pose that I had sketched her in initially, so I imported an image plane to use as reference. In a separate file, I was then able to adjust the smaller details, such as where unwanted warping had occured.

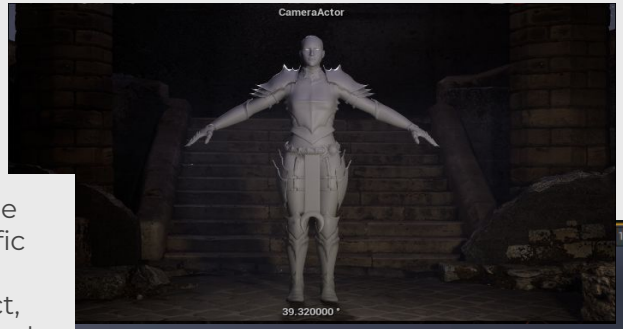
The second pose I worked on was inspired by art I found on pinterest. I wanted to give the regal feeling while also showing a sense of self-interest.
This pose I found more difficult as the details around the waist were heavily warped. Since the character would be stationary however, I was able to re-insert some of the details, such as the belt, and edit them by hand.



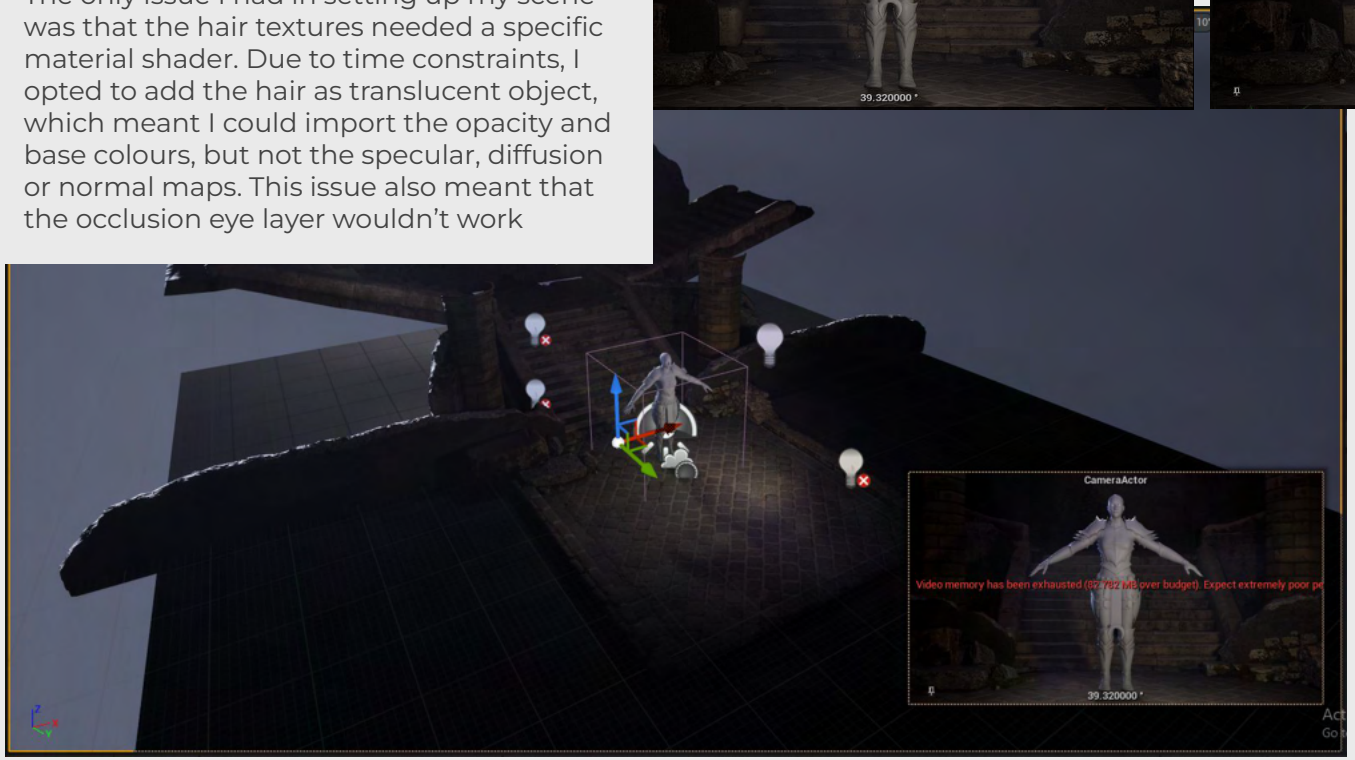


SCENE SET UP

UNREAL ENGINE



The only issue I had in setting up my scene was that the hair textures needed a specific material shader. Due to time constraints, I opted to add the hair as translucent object, which meant I could import the opacity and base colours, but not the specular, diffusion or normal maps. This issue also meant that the occlusion eye layer wouldn't work



Setting up the scene, I used Quixel Megascans for the surroundings, and then lit the scene using an earlier version of my model (since I hadn't quite finished texturing at this point).
I used 7 lights in total; a directional light for volumetric fog, a point light behind the model, to light the stairs, a point light in front of the model, to light the foreground, and 4 spotlights on the model, to create the rim lighting and brighter front light.

CONCLUSION

Overall I was very proud of this project, I feel that I learned a lot, and got to experiment with techniques that I hadn't used before. Creating clothing in Marvellous Designer, retopologising in Maya, making hair cards, and using Substance Designer were all new skills that I learned for this character, but I also created by far my best work as far as body sculpting and detail. I also learned a lot about how models are made specifically for games.

I was very pleased with how I managed to capture the style that I was going for, and how the initial design translated to my model. I found the pre-production research into mythology and imagery, and further development of the character to be interesting, and definitely found it helpful having the input of both my classmates, teachers and friends. The minimal colour scheme and textures I think worked well together, and helped to portray the mood of the character. While not necessary, I also enjoyed creating and lighting the scene for the renders, as a way to further develop her characterisation.

While my technical skills definitely improved, there was a few areas I would like to continue working on, and things I would have liked to have done with more time. Retopologising the shirt and trousers completely was one of these areas, which would have helped both with the shaping of the low poly and the optimisation of the model, as well as decreasing the number of polygons in the cloak. I know the face could also have been optimised further. One issue I had, that I would have liked to fix was the shaping of the cloak, and how it baked onto the low poly - trying to catch both sides of the shape while still keeping the poly count in check was something I found difficult, and would like to research further. The only major thing I didn't manage to complete in the time was adding the scythe, but luckily I can complete this at a later date.

Altogether I found the project both enjoyable and valuable in helping me to improve my skills and understanding of the entire process of creating characters for games.

RENDERS

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