The Art of
Ryan Wong's

Spirit Blossom Kayle

W015690L

Contents Page:

Project Concept:

- Only two original references, although other people have also taken inspiration and made their own splash arts and models.

- https://www.artstation.com/artwork/elmXXG

- Chengwei Pan was a Principle Illustrator working at Riot Games who does a lot of fan splash arts of League of Legends characters he likes.

- Spirit Blossom Kayle is one of the more recent fan arts and inspired me to make a project to recreate the character design as a game model.
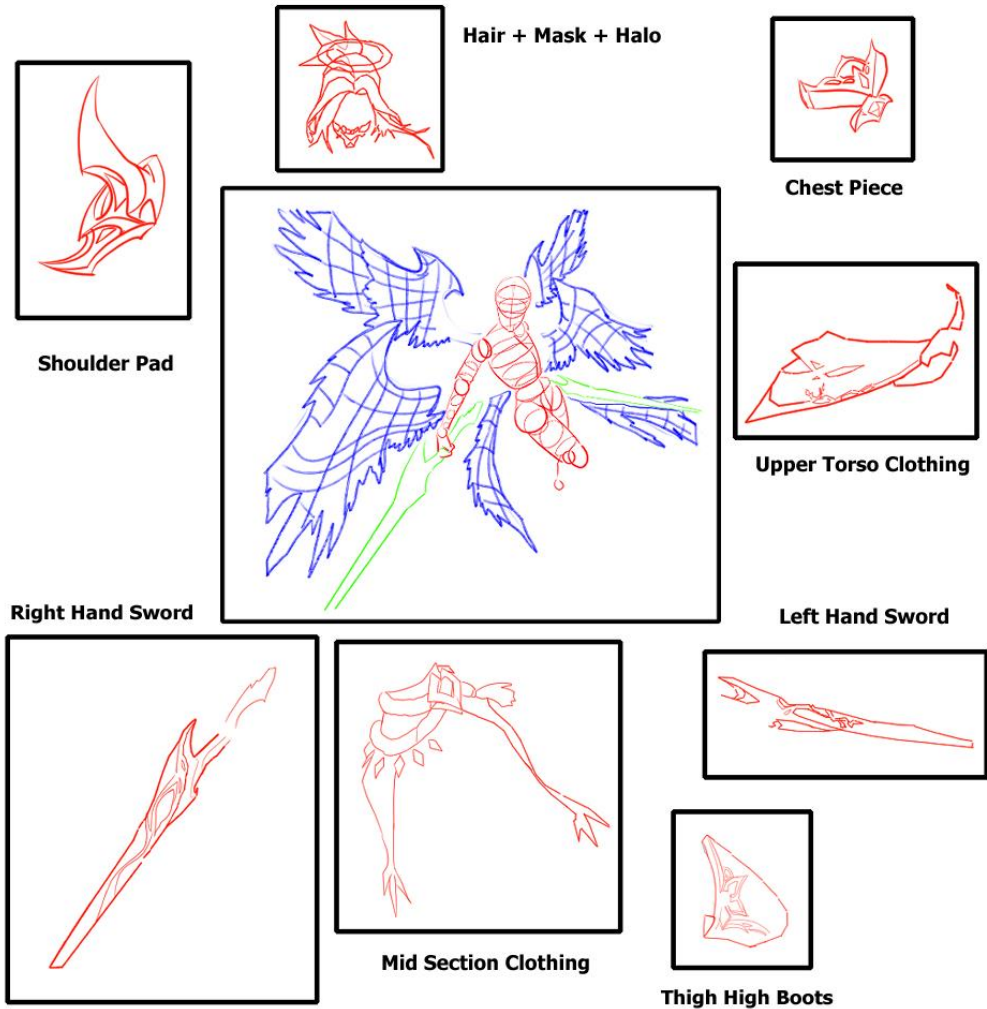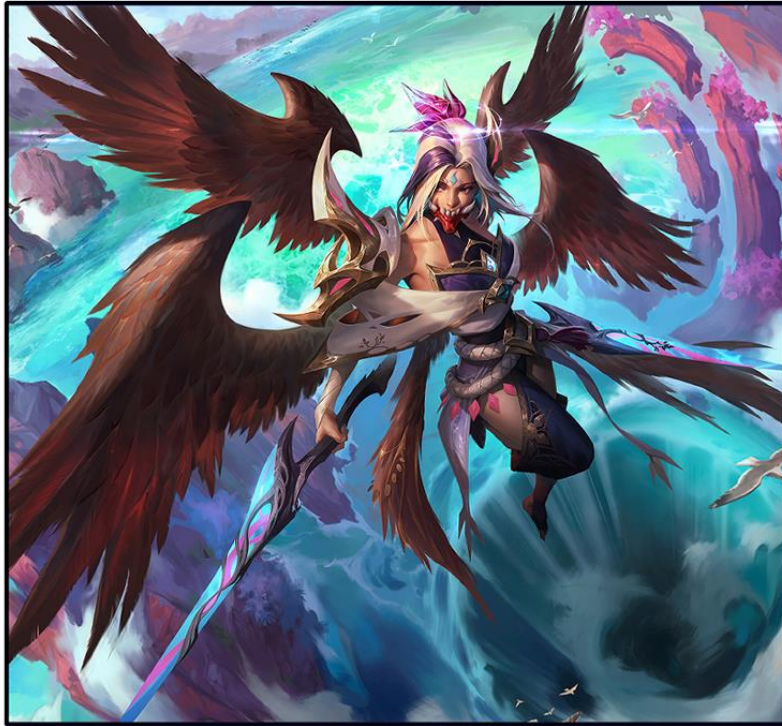
- 1 head

- 8 heads tall but feet are vertical, so it's more accurate to say somewhere in the 7 -8 range

- Kayle's canonical height is 5'4 so this is something to keep in mind when blocking the character

<u>**Measurement Analysis:**</u>

- **Paintovers helped to breakdown the design into pieces**

Hair + Mask + Halo

Chest Piece

Shoulder Pad

Upper Torso Clothing

Right Hand Sword

Left Hand Sword

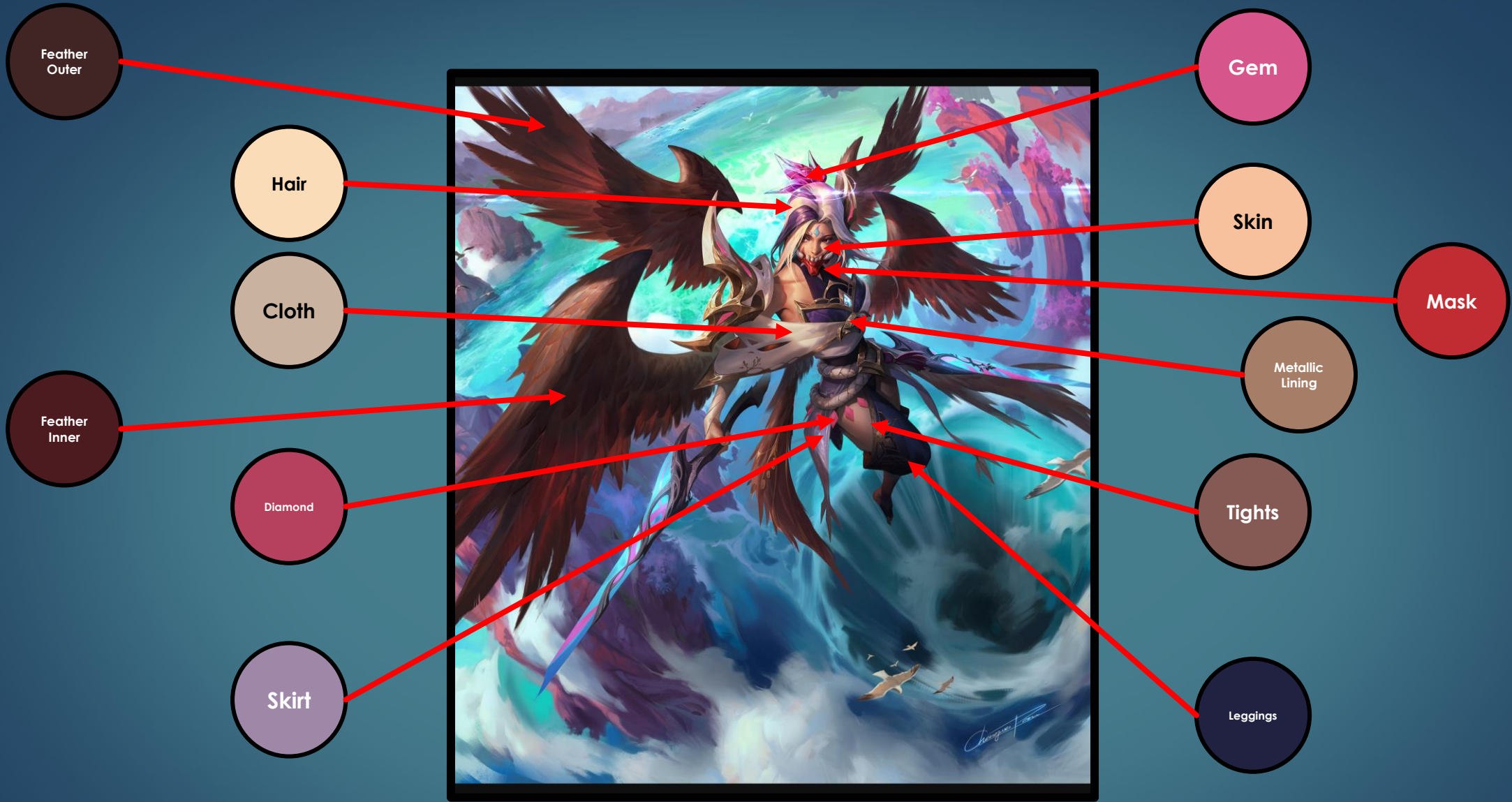Mid Section Clothing

Thigh High Boots

- **Information about the pose also obtained from this**

<u>Paintover 01:</u>

- I tried my best sketching how the back view of the character may look in pose
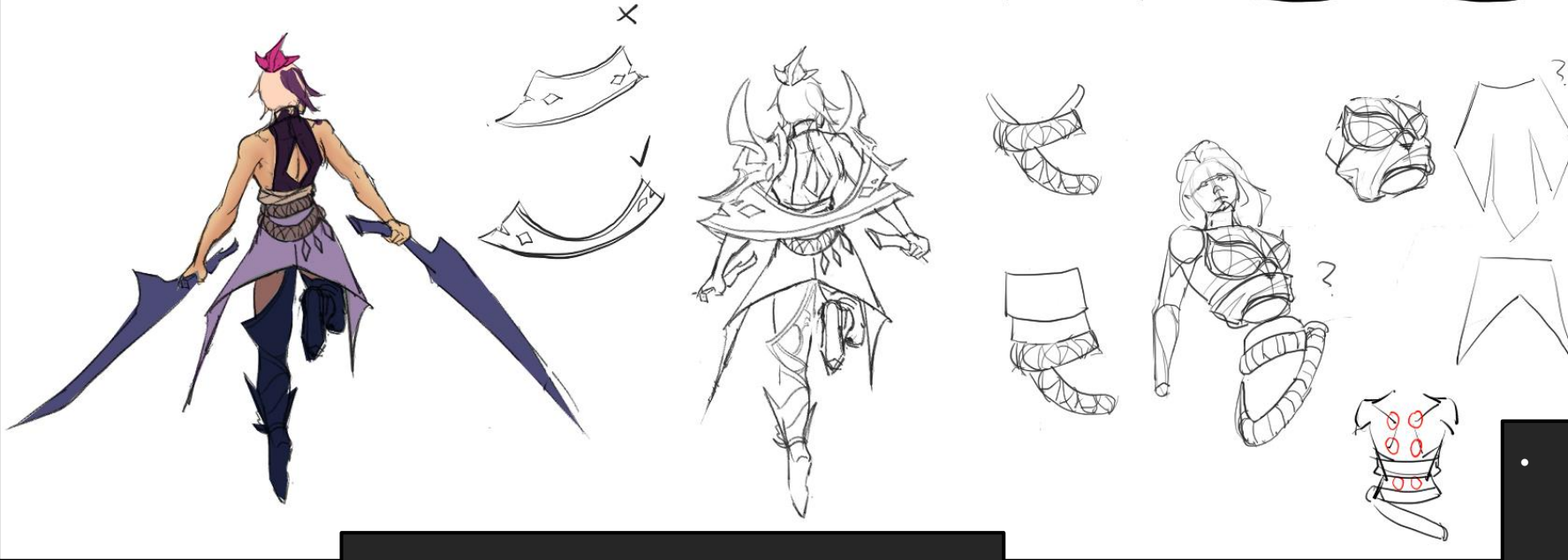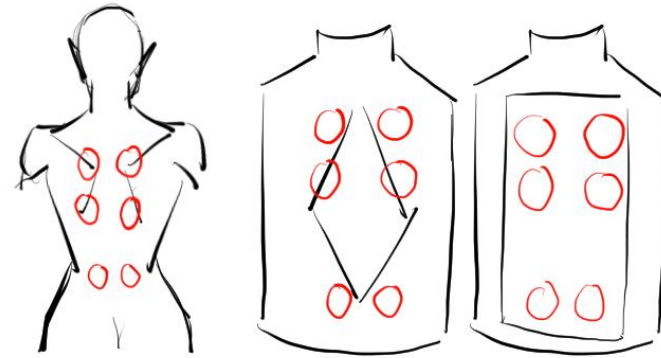
- This helped me visualise the missing details on the back of the design

- I did a little experimenting until I had a good idea of a back design that fir the existing one

Problem Solving Through Drawing

Colour Palette 01:

Colour Palette:

Skin OR **Skin**
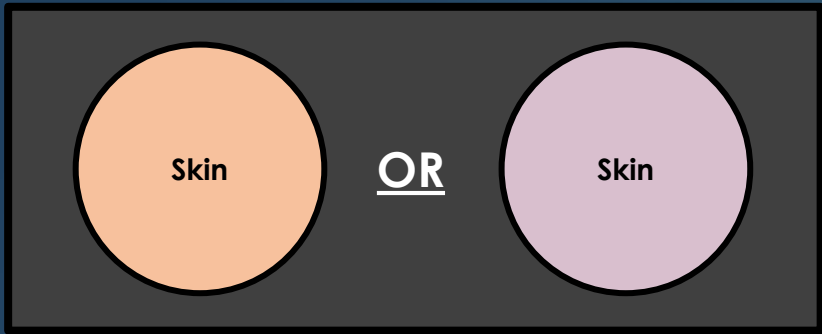
- Final splash art colours have more priority

Tights OR **No Tights?**
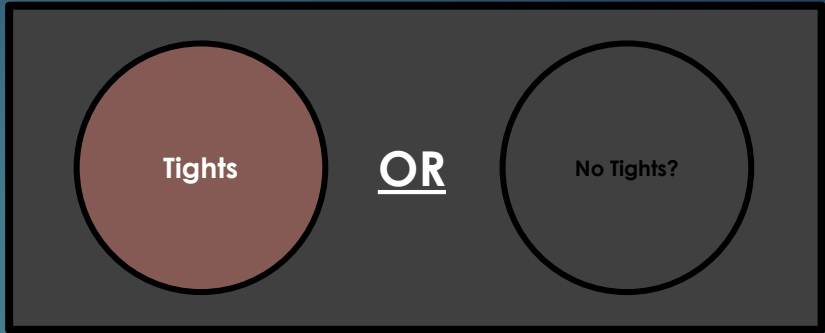
- Colour varies between the final splash art and concept

?

- **Important to keep in mind**

Mask OR **Mask**
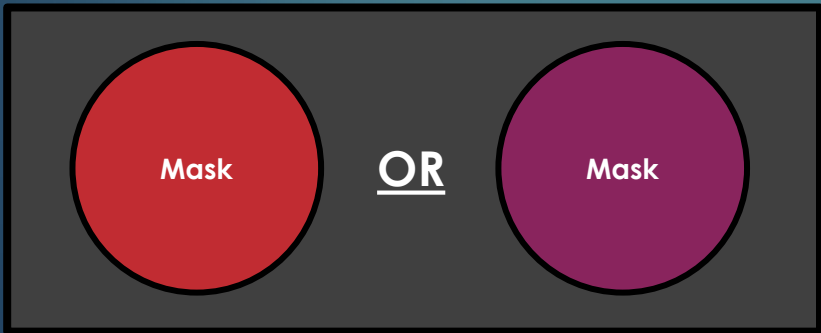
- **HOWEVER** lighting and shadow effects the character in both pieces of work

**Hair** OR **Hair**

Colour Palette?
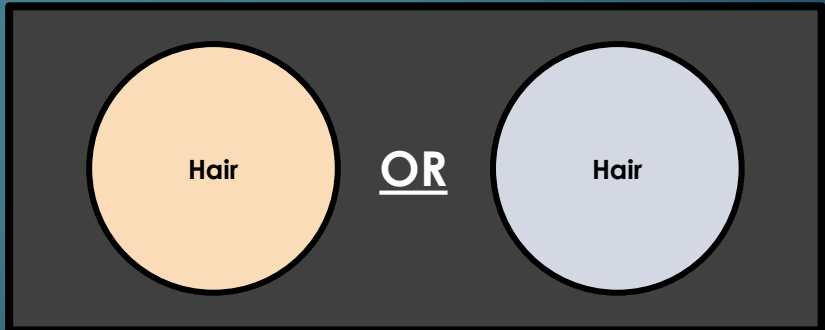
Visual references were gathered from whatever I thought would contribute to creating my character

League of Legends was my priority reference which includes:

- League of Legends
- Wild Rift
- Cinematics
- Arcane

There's also a fan model created of the design already which helped give me a second perspective and interpretation of the design besides my own
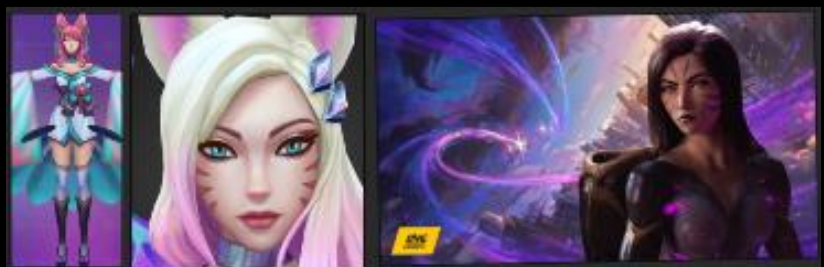

Anatomy for Sculptors is another primary source of reference I used when it comes to anatomical forms.

It always helps to have visual reference on hand when sculpting because it helps enforce knowledge of the human body and skills creating the anatomy.
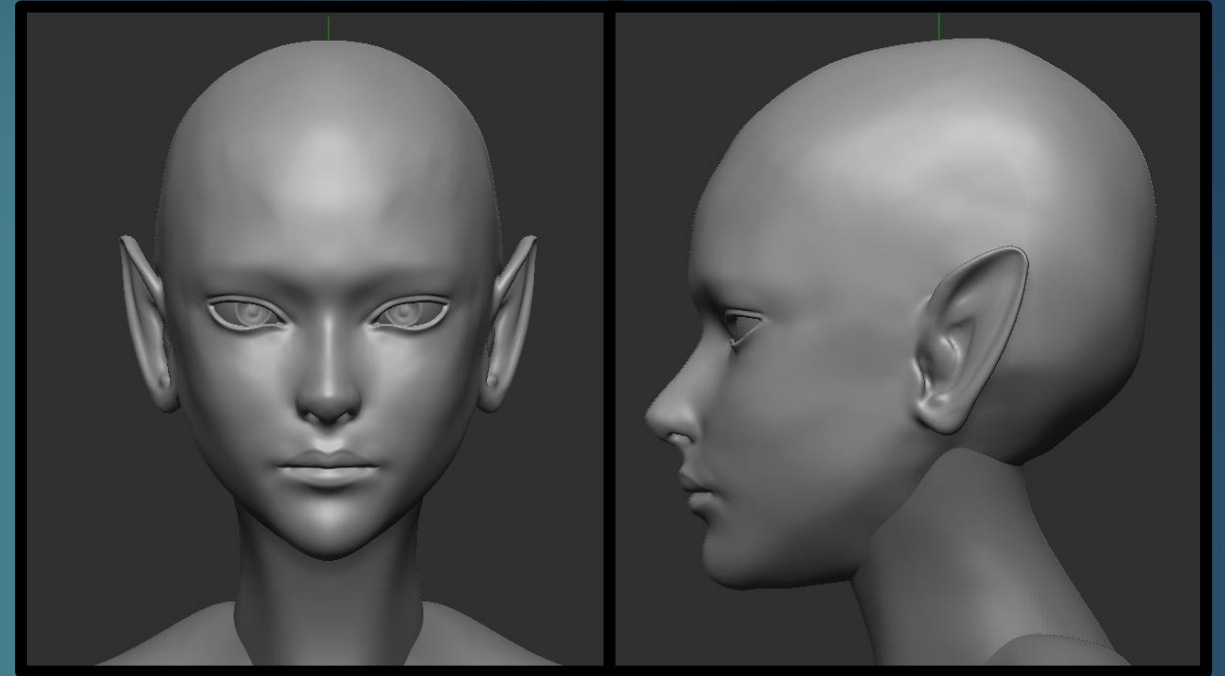

ULDIS ZARINS
WITH
SANDIS KONDRATS

ANATOMY FOR SCULPTORS

UNDERSTANDING THE HUMAN FIGURE
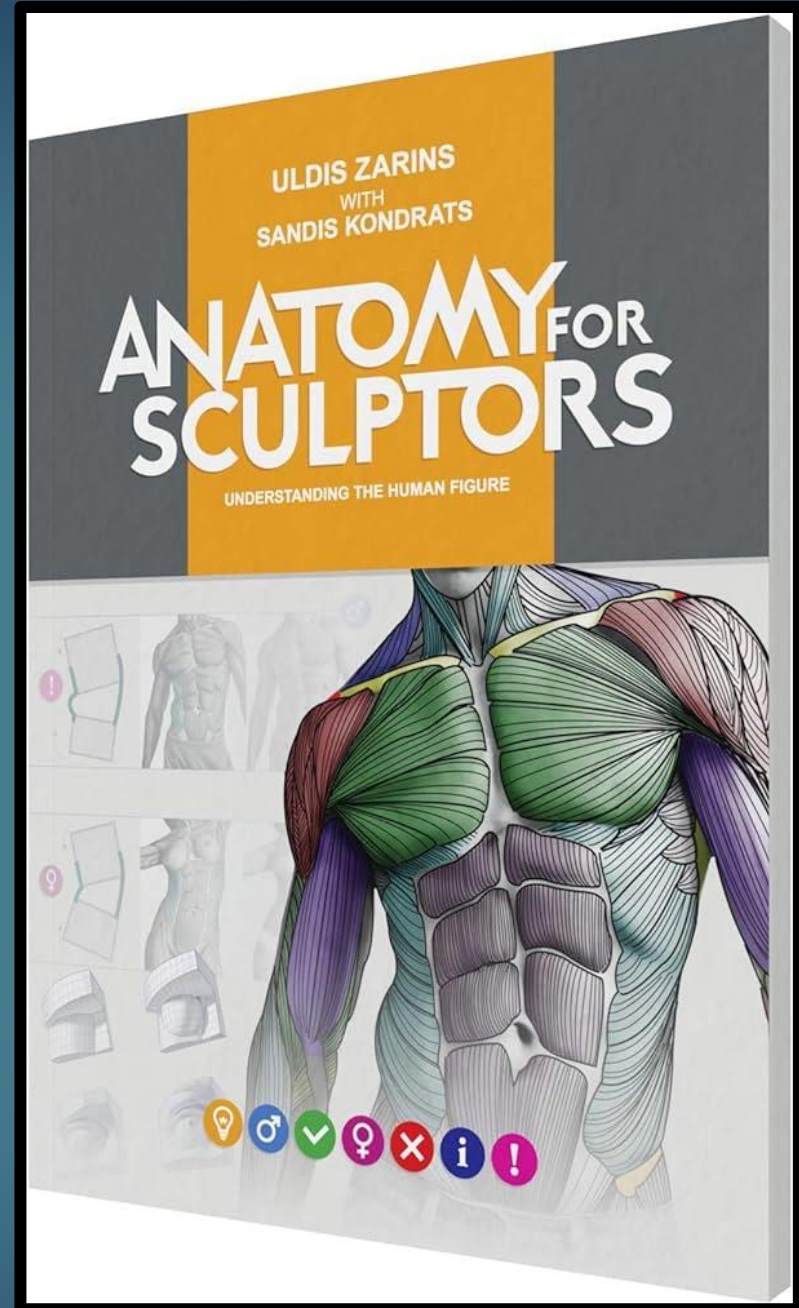
Reference Gathering:

Earliest Blockout:
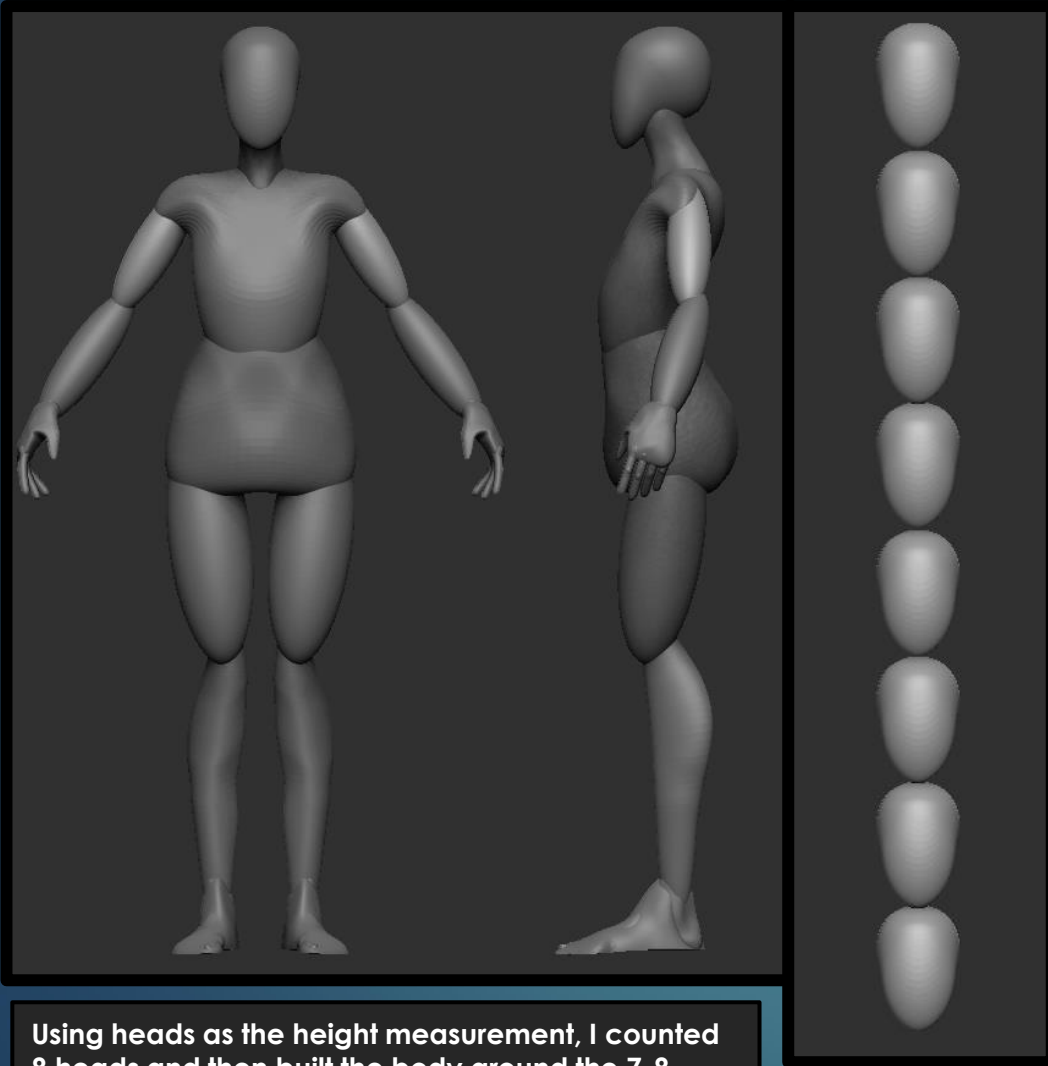
Using heads as the height measurement, I counted 8 heads and then built the body around the 7-8 head mark that I had previously stated.
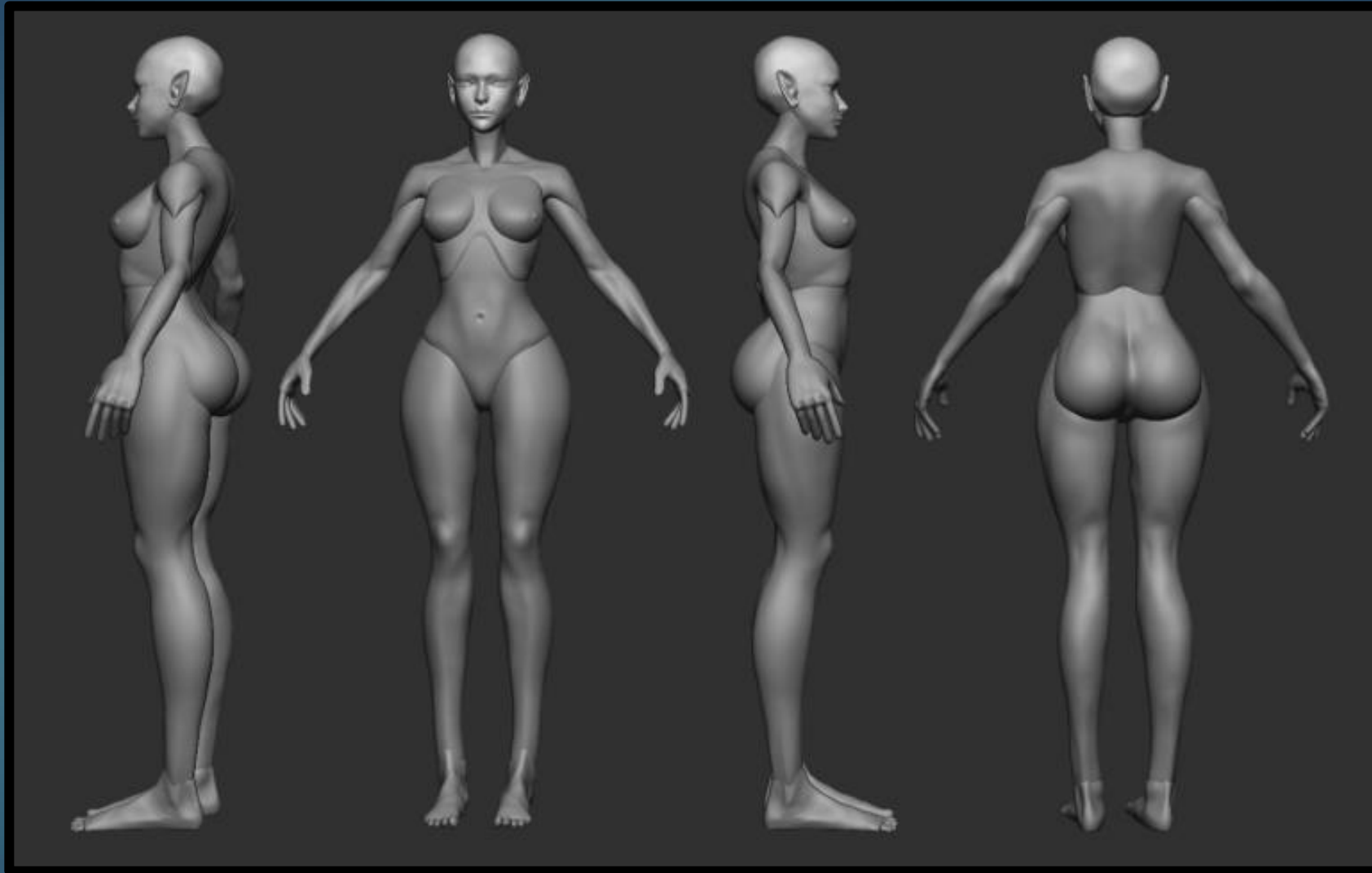
Head Development:

I tend to always start with refining the head because it's what makes a character sculpt feel the most 'alive' in a sense; for me at least.

In this stage, it's a matter of getting the correct planes and the general likeness of the character's facial proportions.

After research into Riot Games' character development process, I worked towards this being a proxy model, meant solely as a base to 'test' the design.

Initial Blockout:

I started refining the body with some anatomy, making sure to keep most of the parts separate to keep development module if I need to return and adjust some areas. At this stage, I'm ready to roughly block out design elements like the shoulder pads and hair etc. They can be rough since I just want to get the idea still.
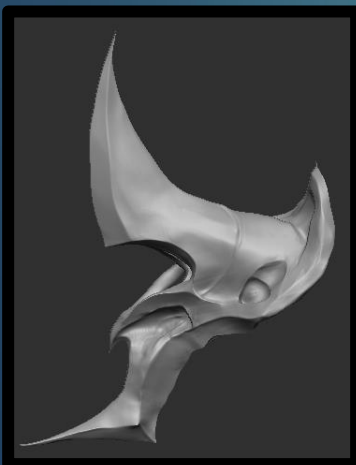
Primary + Secondary:

Silhouette:

A modified 'CurveTube' brush was used to create an initial strand that I then sculpted into place.

CurveTube
Base Type: Insert Mesh Dot

Mirror And Weld

The skirt and leggings were made by masking the base body, extracting, and roughly moving into more accurate shapes to match the concept

A rough poly paint was applied to everything to achieve more likeness

Rough Assets:

Proportion Adjustment:

After prioritising my other module's deadline, I came back to this project with new considerations.

I decided it would be a beneficial idea to use the same pose as the UE5 mannequin because my thought process was that I could eliminate potential mistakes further down the line, such as cage baking too close or rigging etc. if I use a working model example.

It's best to make such big decisions early because otherwise there'd be a lot more work that'd need redoing.

Even though I did fit my character model into more of the shape of the mannequin, it should be noted that I only needed to reposition the arms and legs a little without changing the overall proportions too much.
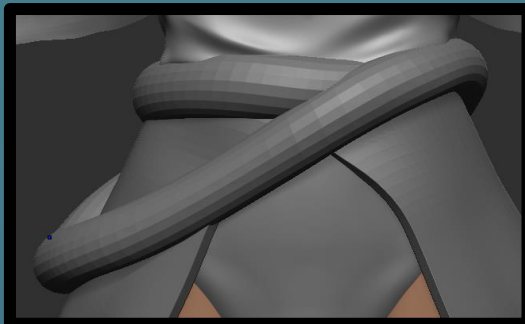
- (Still 7-8 heads tall)

Adjusting Body Proportion:

More Design Elements:
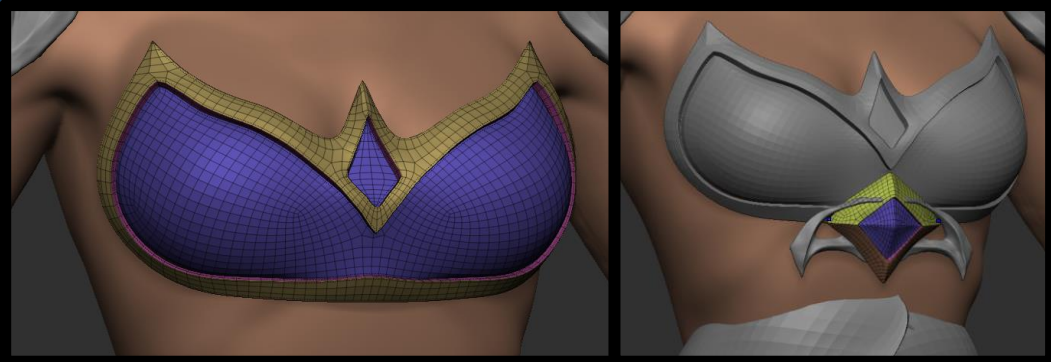
For the chest piece and the emblem, I made use of the ZModeller tools, along with poly groups because they were pretty simple hard surface shapes that would've taken too much time trying to organically create.

The rope is something I hadn't thought too much about at this point, so I made I made the general shape for now and think about it when refining the model.

The mask was organically made just starting with a sphere and sculpting.

The under clothing used the same ;mask and extract; technique as used previously.

Rough Assets:

- This proxy model is at a point where all the necessary information is there and looks like the character design.
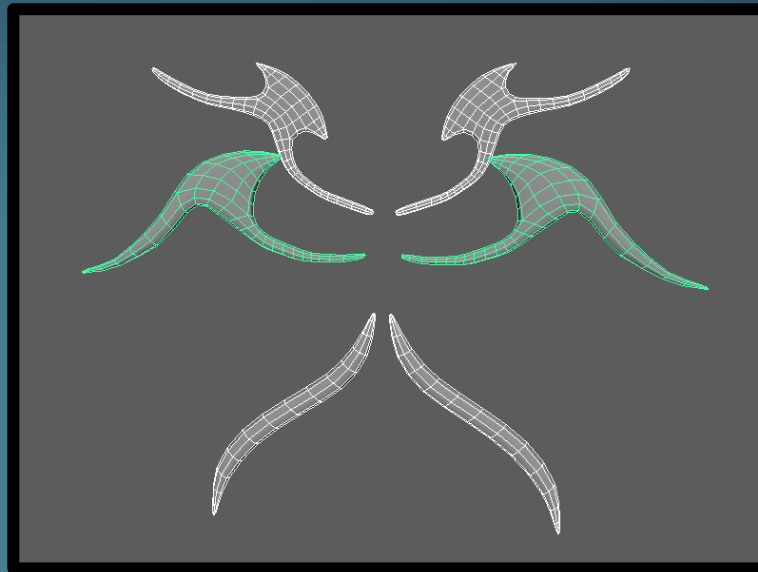
- I will be using the body mesh as a base for the body retopology, and everything else is mainly reference to start making the low poly assets.

Proxy Model:

- I created meshes to act as a surface to place the feathers on.

- I started by drawing the feathers to get an opacity and base colour map in Clip Studio Paint and this was enough to already start placing the feathers to create the wings.

Wing Creation:

Decimation Master

1-Options

Freeze borders

Keep UVs

Use and Keep Polypaint

Polypaint weight

2-Pre-process

Pre-process Current

Pre-process All

3-Decimate

% of decimation 20

k Polys 200

k Points 200

Decimate Current

Decimate All

Presets

20 k 35 k 75 k 150 k 250 k

Custom   Custom k Points 30

Utilities

Delete Caches

Export All SubTools

- Decimation Master was used to reduce topology of the highpoly body into something that could functionally work in Maya.
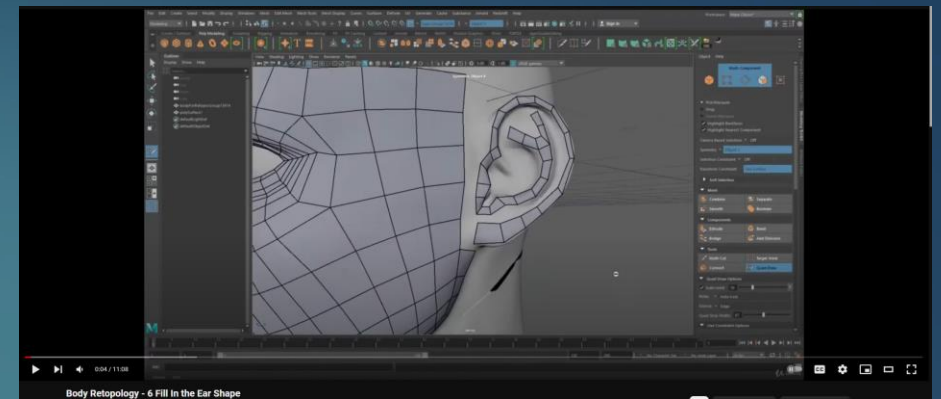
ited1:Group36189

Quad Draw Tool: Drop points on Live objects to create new faces for re-topology
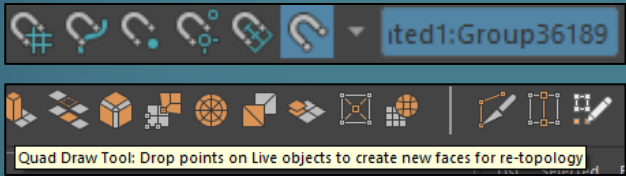
Verts:	312641	304984	0
Edges:	930146	914946	0
Faces:	617517	609964	0
Tris:	625000	609964	0
UVs:	15078	0	0

- The new bodymesh was 610K triangles which is still considered a high poly count still but my PC can handle it.

- I like to import the meshes in individually so as to focus on just one part at a time.
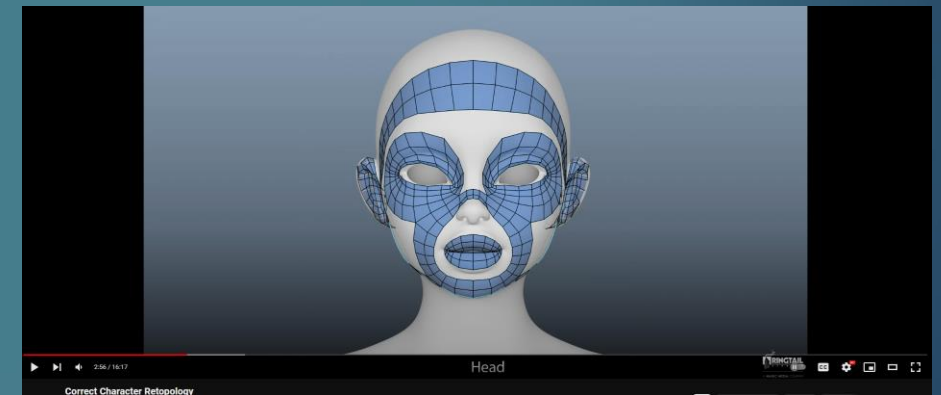
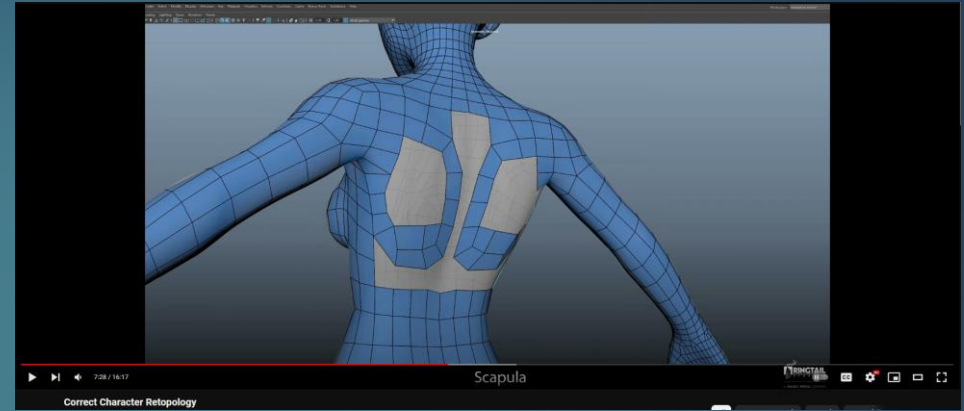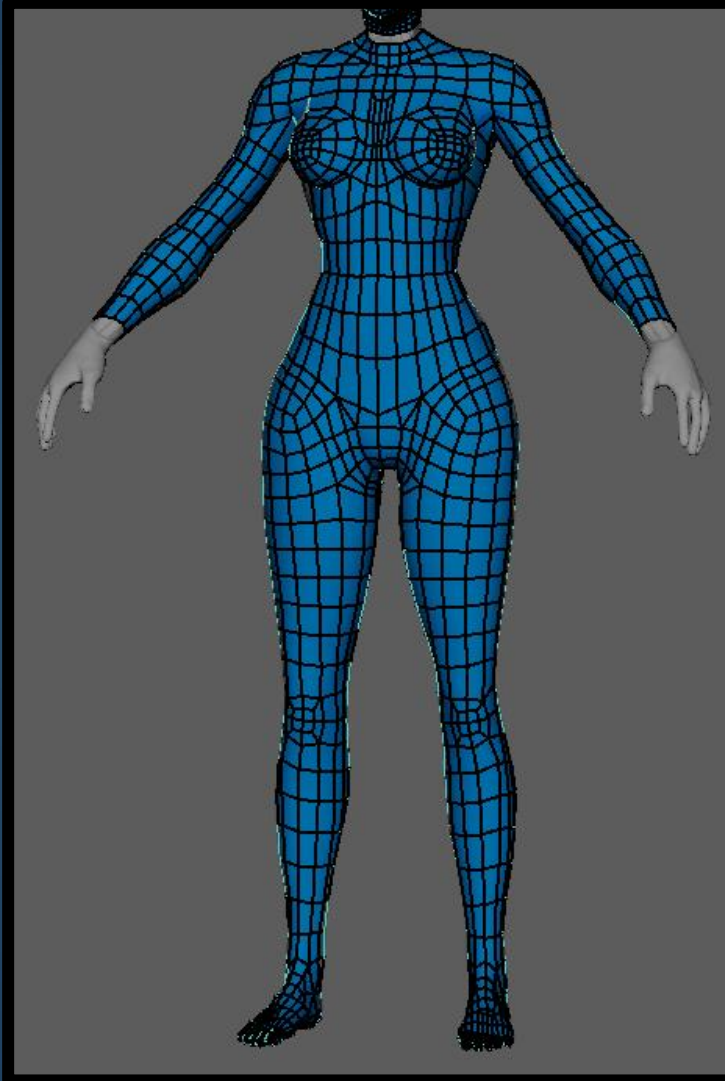# Decimation and Preparation for Retopolgy in Maya:
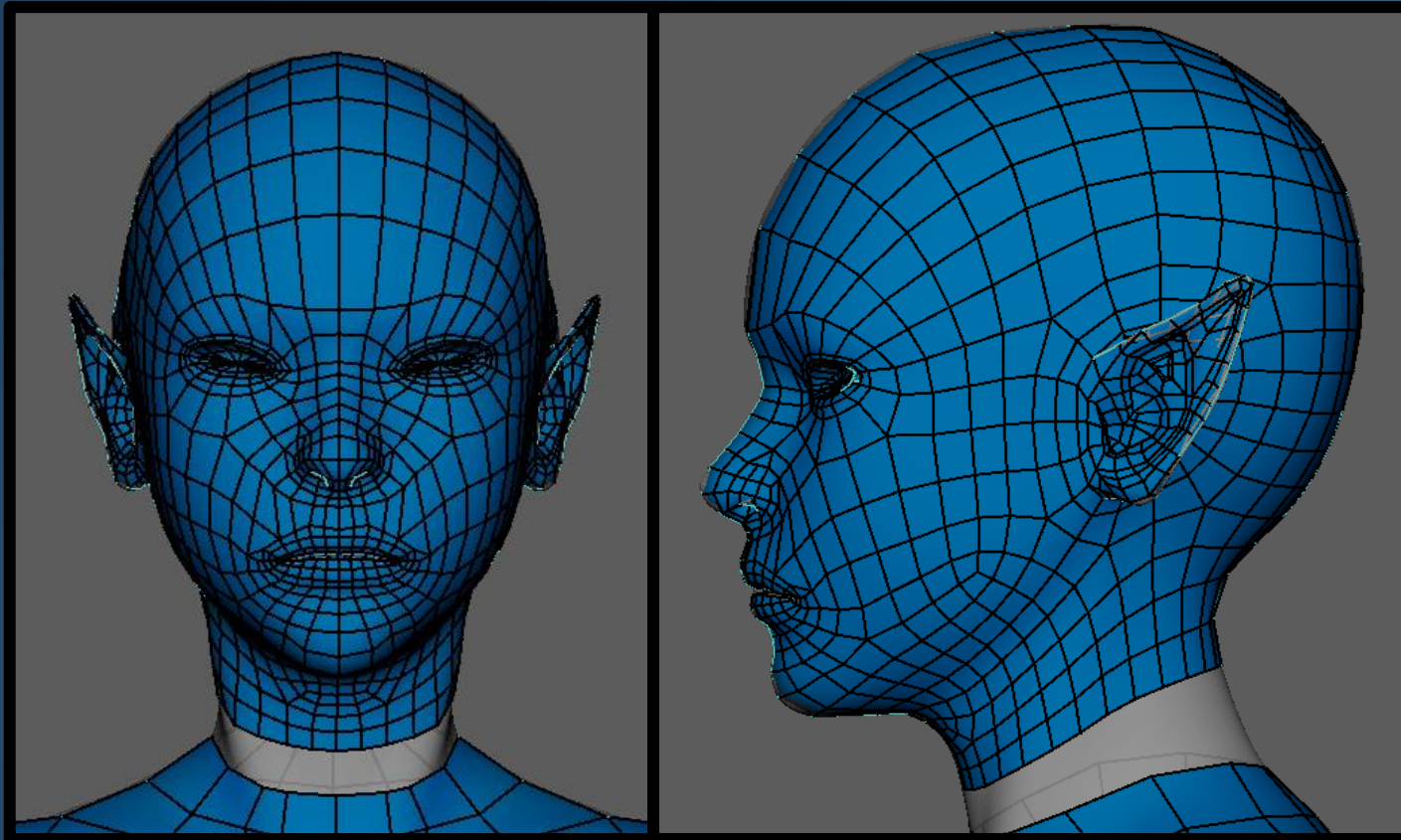
- Head retopology was done separately from body because the head will naturally be denser in polygons and I can connect them together afterwards.

- I used two guide videos to help with the ear and face topology.

https://www.youtube.com/watch?v=u7yDB0wcC30&t=2s

https://www.youtube.com/watch?v=3EG7krYP1h0&t=586s

Retopology – Head:

- I used the same video guide for the body as I did with the head.

- There are some variations where I added triangles because my thinking is that I can retain the shape of the mesh more accurately and they should help to decrease deformation when posing the character later.
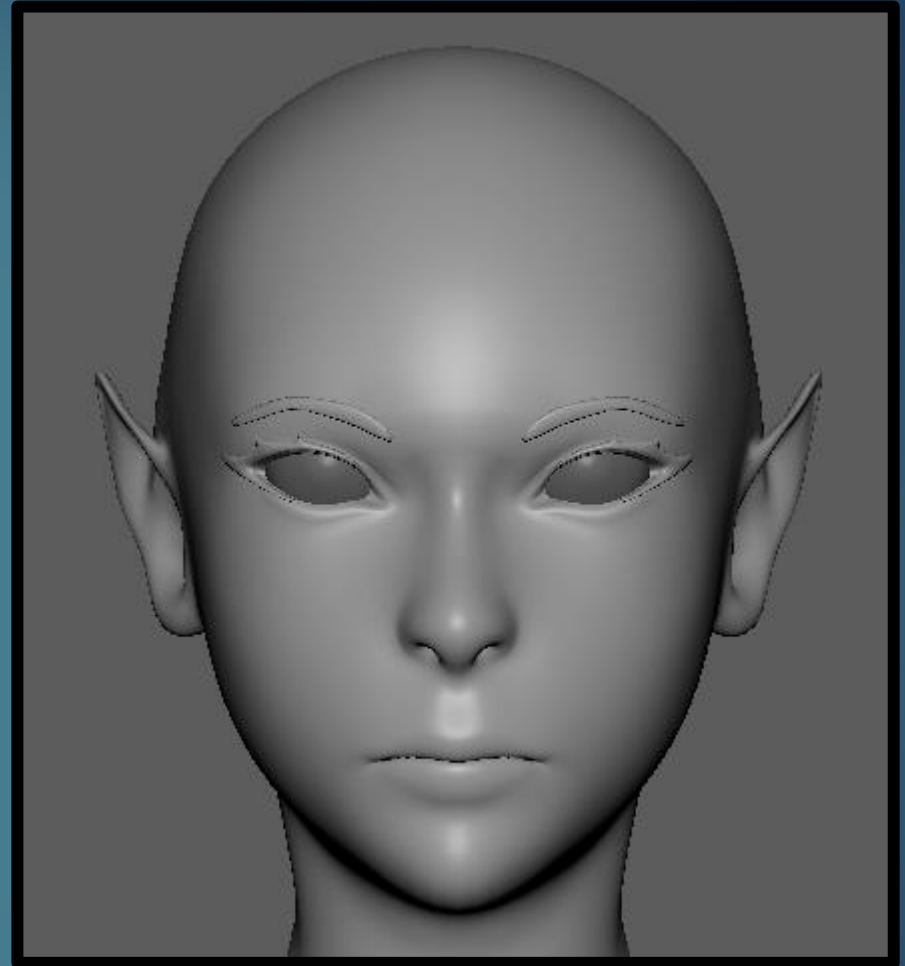
Retopology - Body:
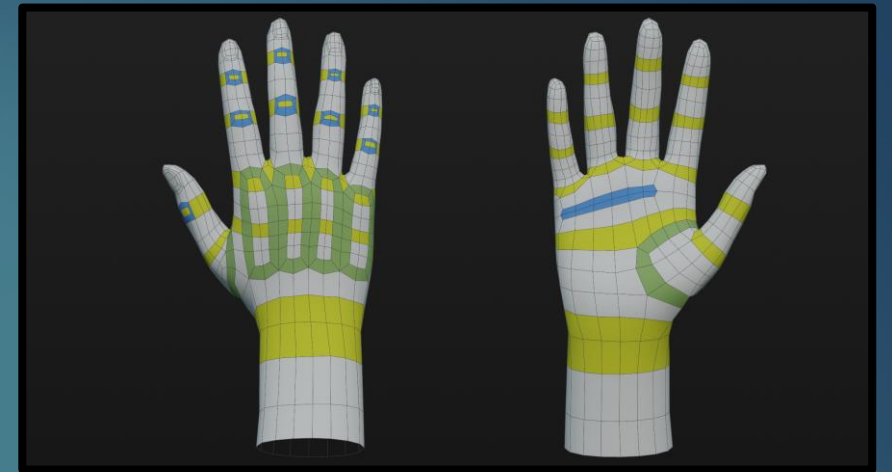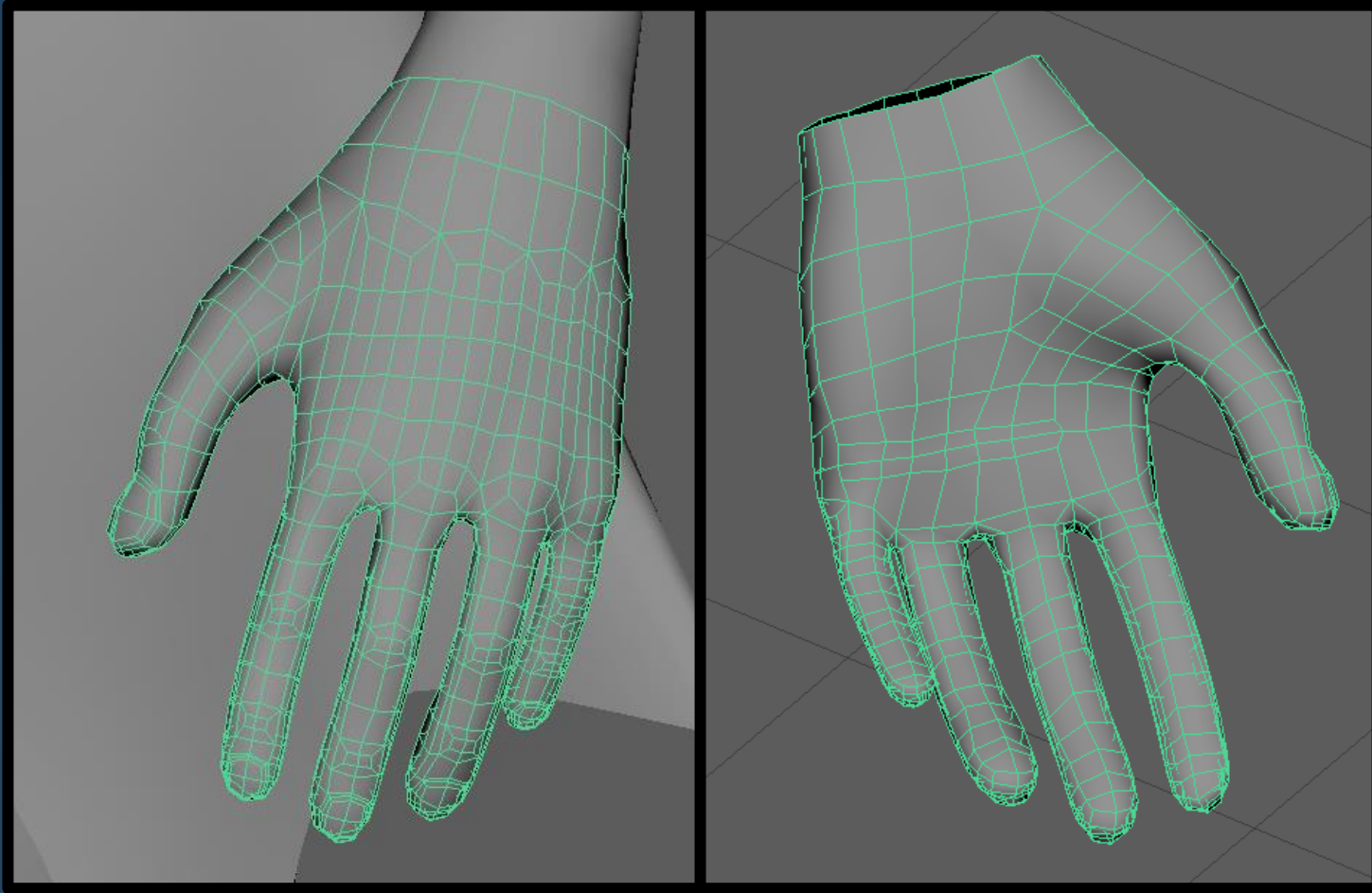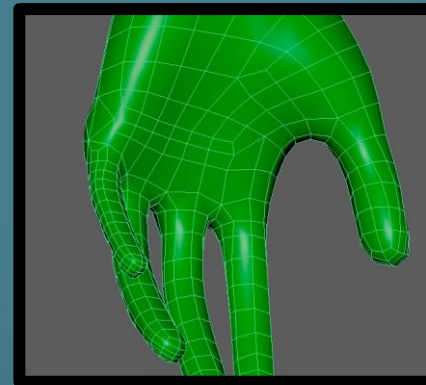
- The hands need to be rigged so it's an important step to have good topology here.

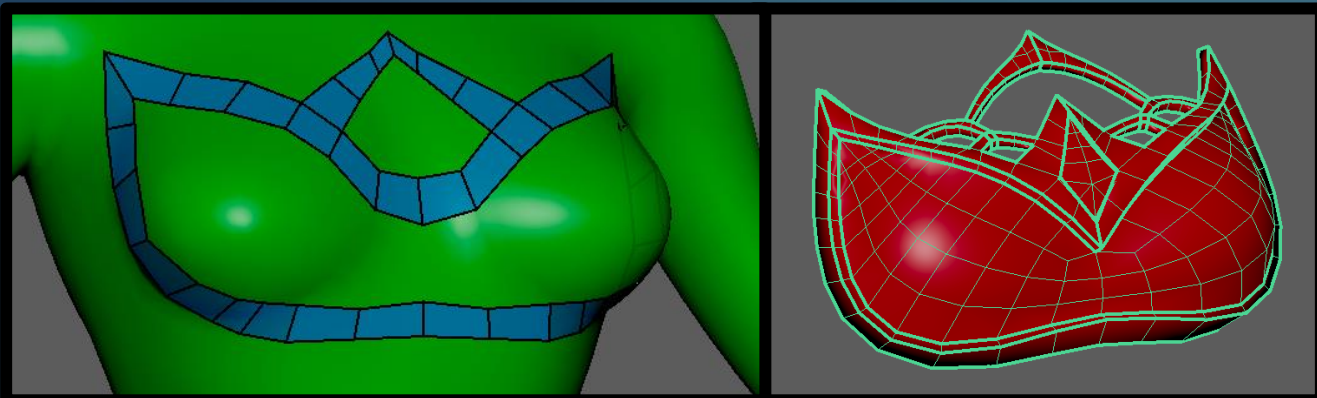- After advice from tutor, I turned the Ngons into triangles.

Retopology - Hands:
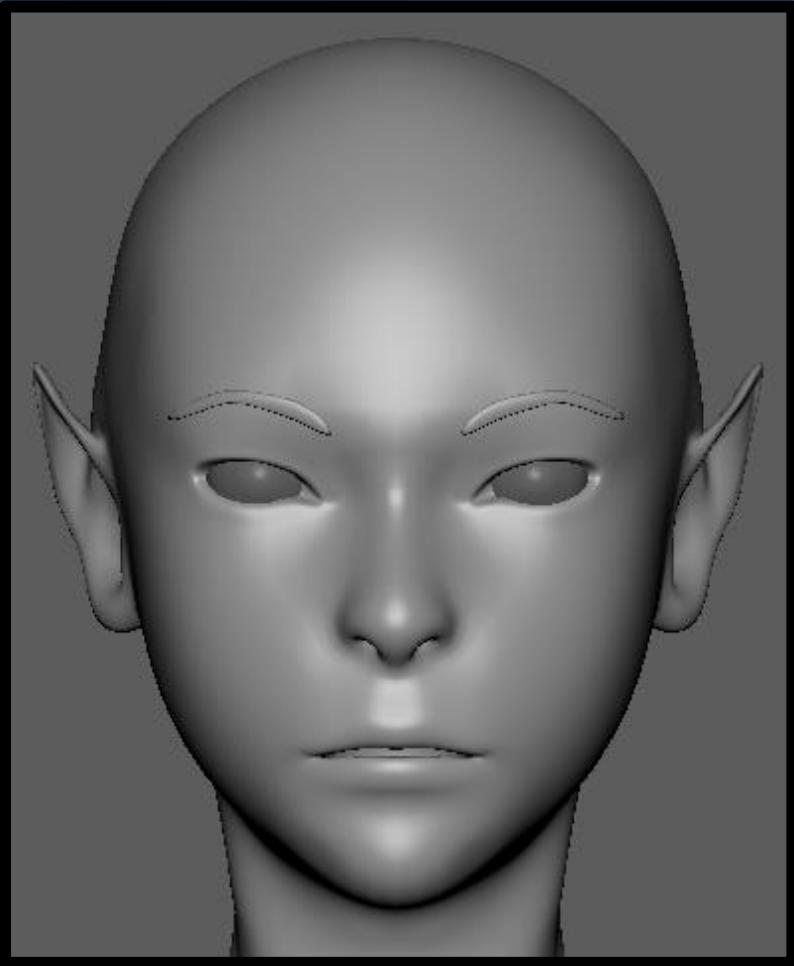
The eyes were a little small, so I went back into ZBrush with the low poly, added subdivisions and adjusted the eye size. I also added eyebrow and eyelash meshes in Maya using quad draw by just drawing the shapes, extruding and smotthing.
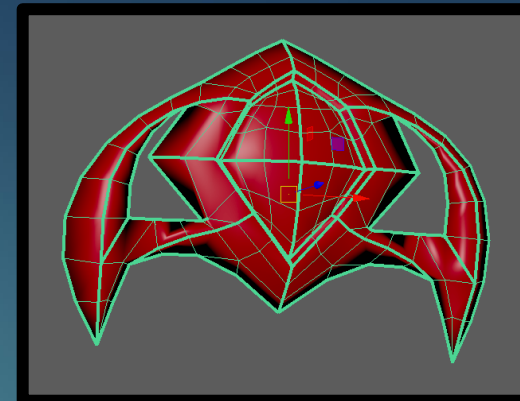
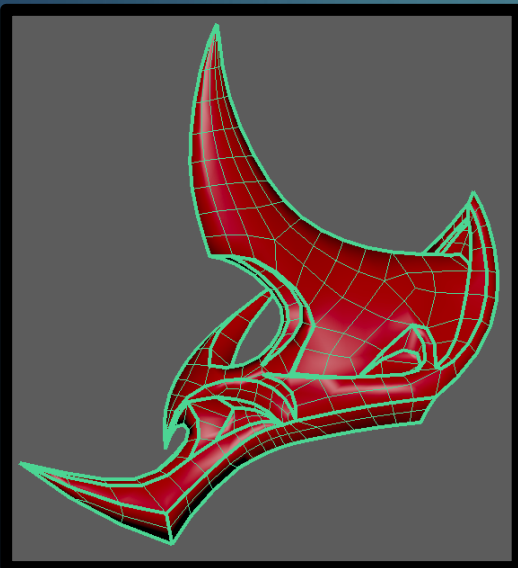# Face Adjustments and Additional Features:

To create the chest piece, I used quad draw on the body to create the outline, filled in the gaps, and then simply extruded where it made sense.
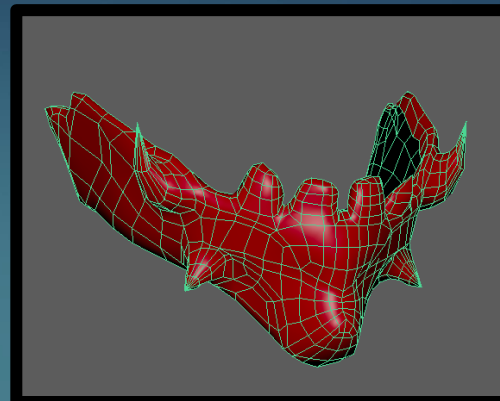
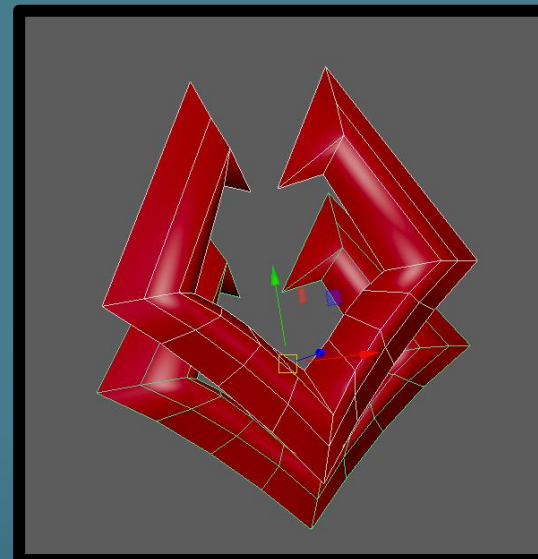The low poly mask could be made using the proxy mask mesh as a live surface and using quad draw.

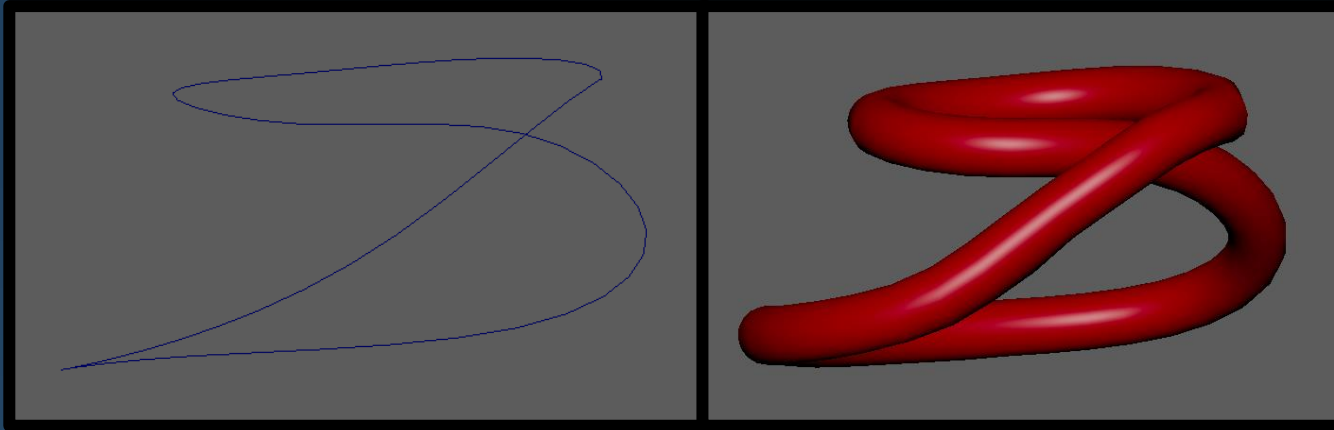The emblem was made the same way as the chest piece.

- The shoulder pads were not so easy.

Because of the very complex shape, I needed to move vertices and extrude edges manually only using the gizmo tool to achieve it.
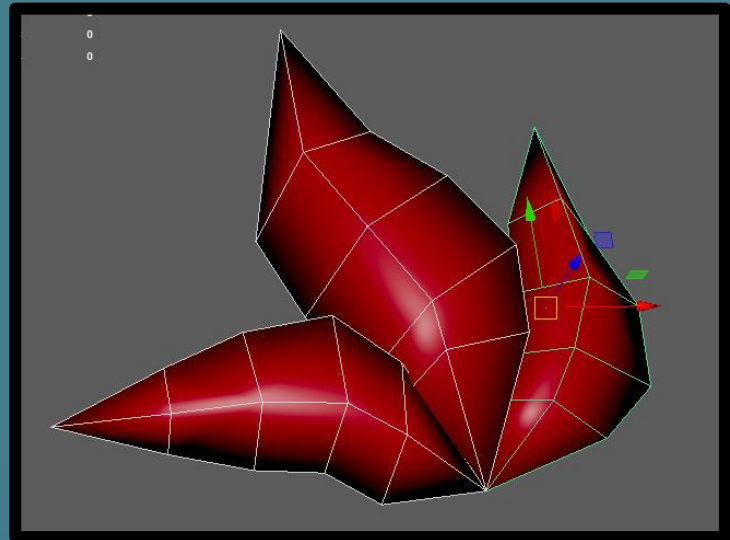
I left the buckle for this stage because the shape was simple enough to model quickly with box modelling.
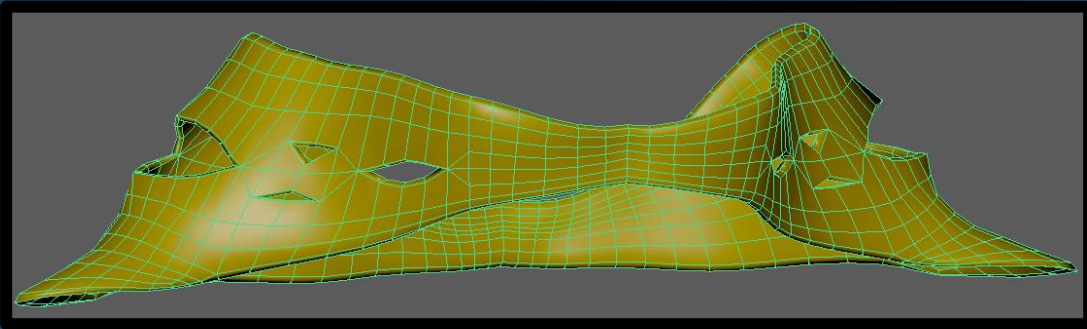
Low Poly Armour:

- To create the rope, I used a curve and 'sweeped' it to create a mesh around it.

- I've never used this tool before so it was nice to see it worked well.

Sweep Mesh
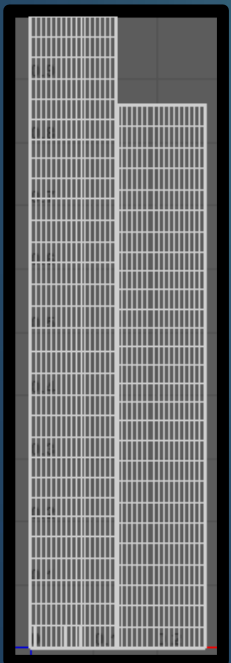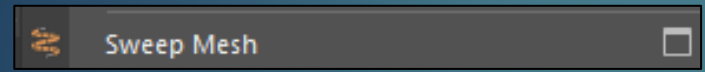
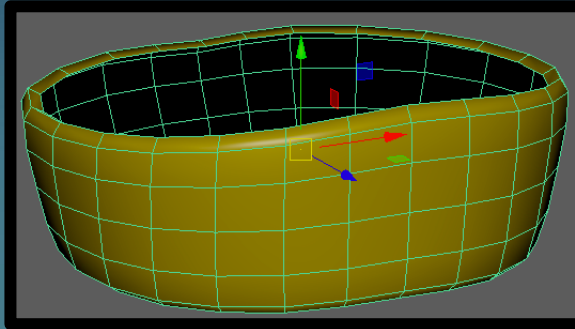What's nice about this tool is that it automatically straightens the UV which saves a bit of time.

I box modelled the gem hair accessories from scratch because they were very simple shapes.

Low Poly Miscellaneous:

Cloth was easy to make just by using quad draw on body mesh, extruding and deleting the inner faces that won't be seen.
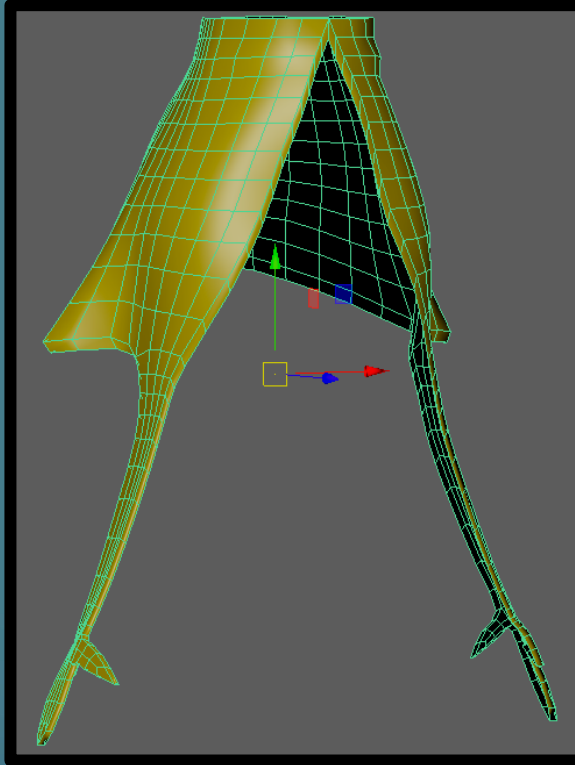
This cloth was made by quad drawing the general shape onto the body and then mainly manually moving vertices and faces around using soft selection with some curve modifiers applied.

The holes were made by deleting faces and merging vertices to make them sharp.
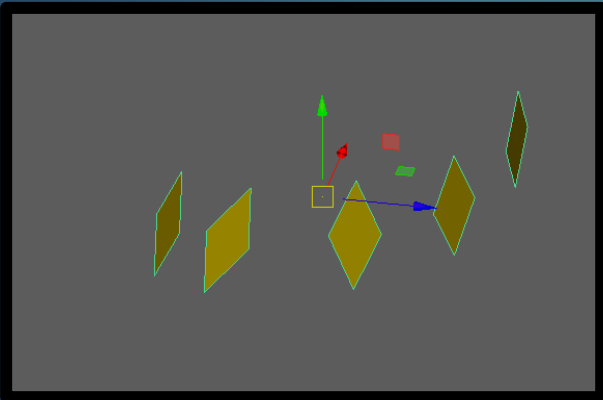
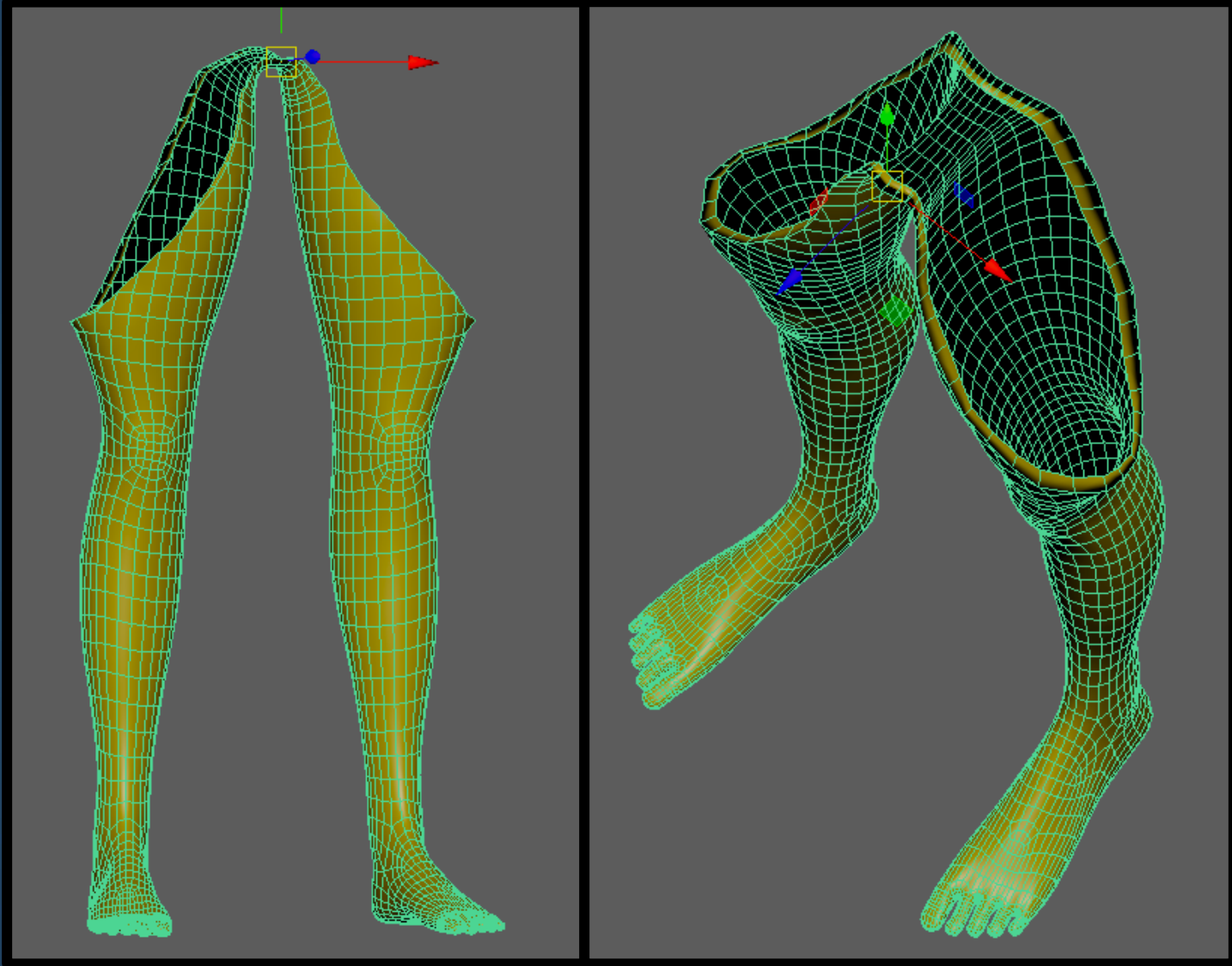After all that I extruded the surface out to create thickness.

I used quad draw on the body and once I had the necessary topology, I moved the components into place.

- I left these out of the proxy model because they just needed to be on quad each.

Low Poly Clothing 01:

My approach for the leggings was to:

1.   duplicate the base body mesh
2.   carve out the shape of the leggings
3.   delete unnecessary faces
4.   pull sides out using soft selection with curve modifiers

Following that, I had to:

•   delete the lower leg of the base body mesh since it would no longer be seen and could've caused clipping errors when posing.

•   extrude the top edge to give the illusion of thickness

Low Poly Clothing 02:
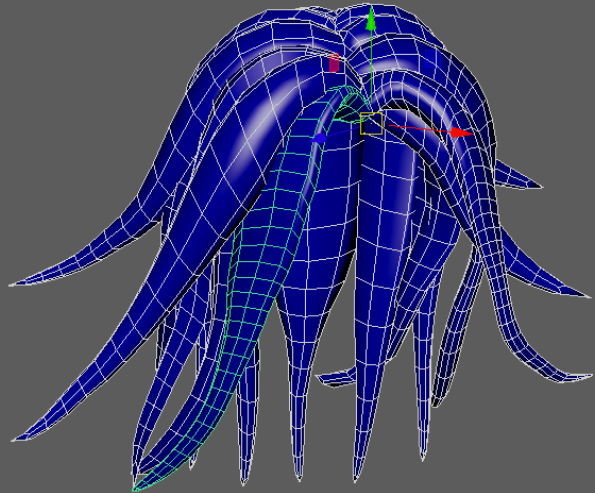
I thought about ways to make the hair, ranging from:

- Quad drawing the proxy model hair
- Using hair cards
- Making them from scratch

What I eventually decided on was extruding a cube into the proxy hair strand shapes.

This method worked well considering I was low on time and I can still mimic individual hair strands in the texture .

Additionally, I UV'd some strands and duplicated them to add more volume whilst they shared the same UV shells.
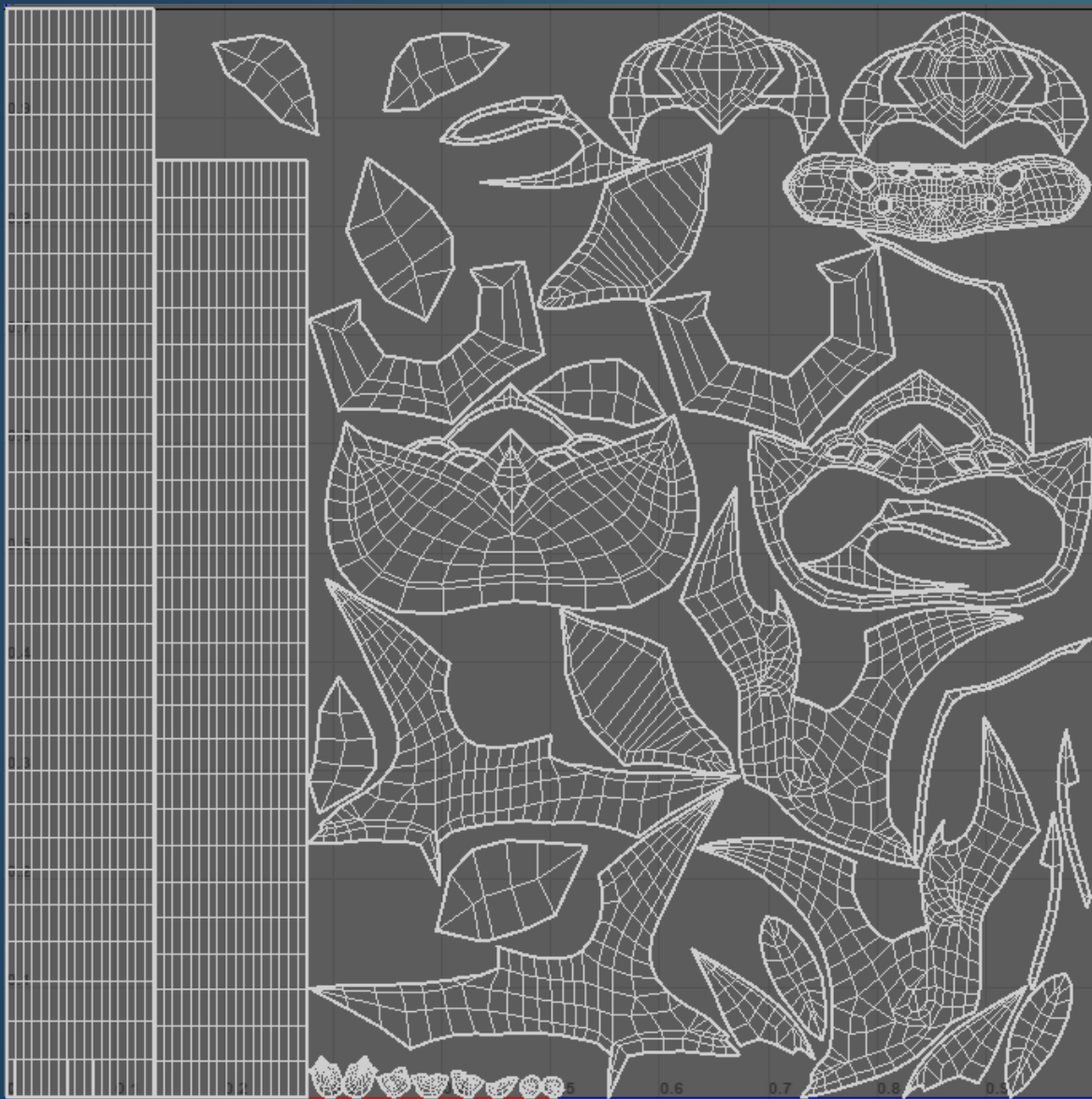
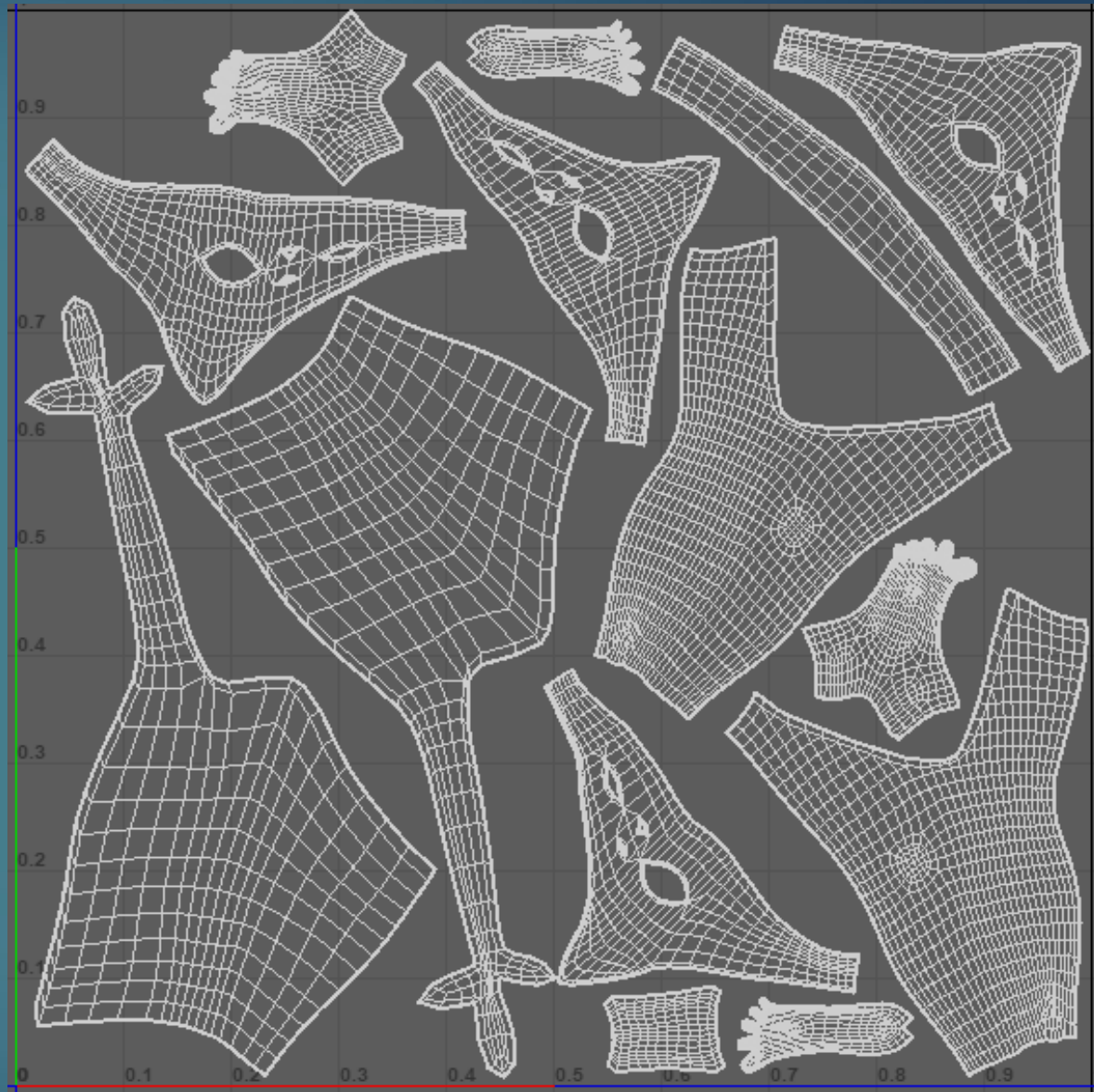I purposely made the two purple strands in the design to share the same UV space to save more space.
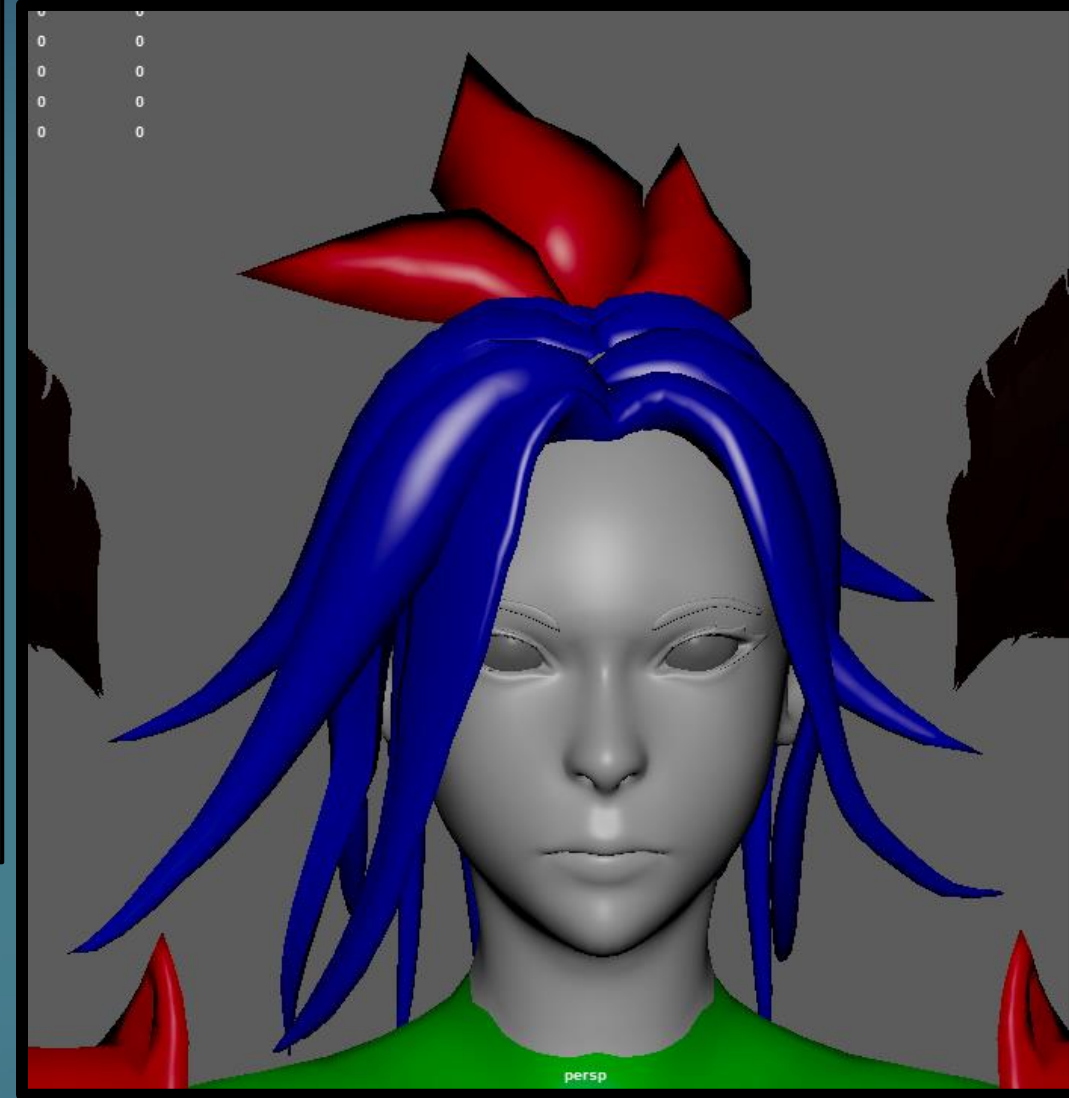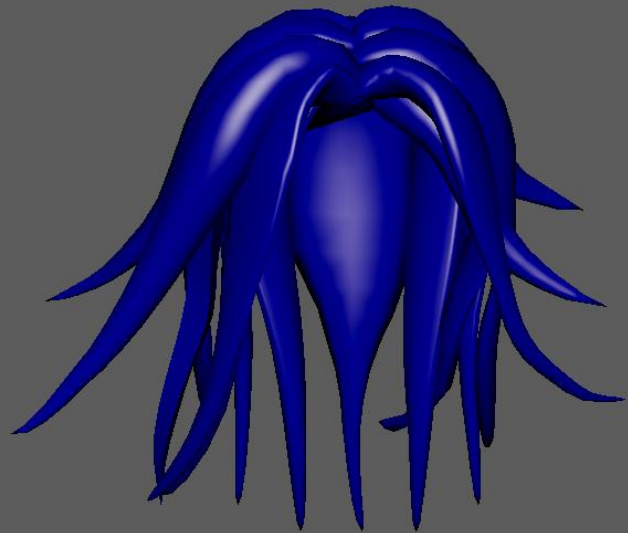
Low Poly Hair:

Complete Low Poly Character Mesh - 56,073 Tris (No wings) - 72,648 Tris (With wings):

Armour + Miscellaneous Texture Set:

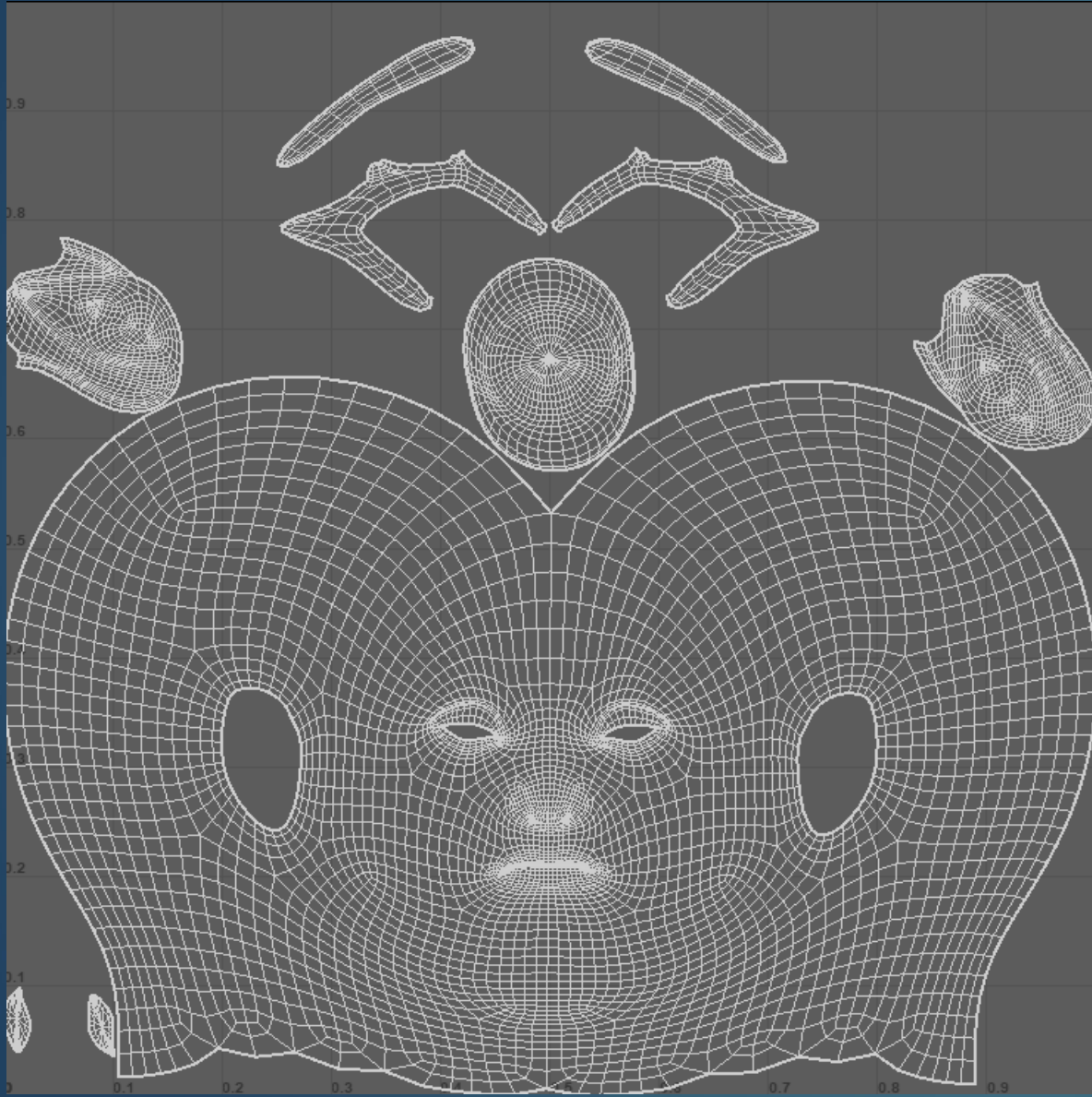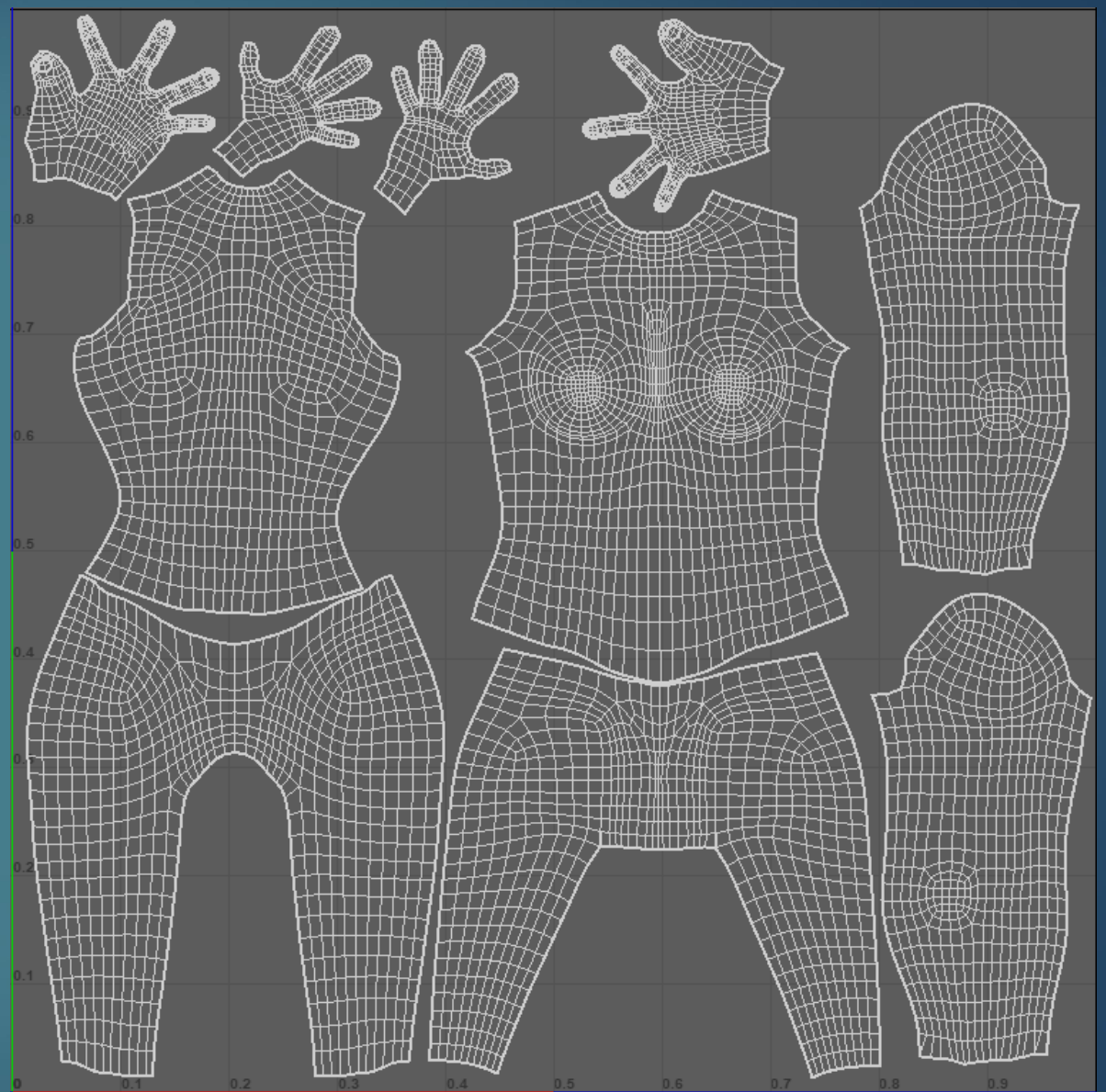**Clothing Texture Set:**

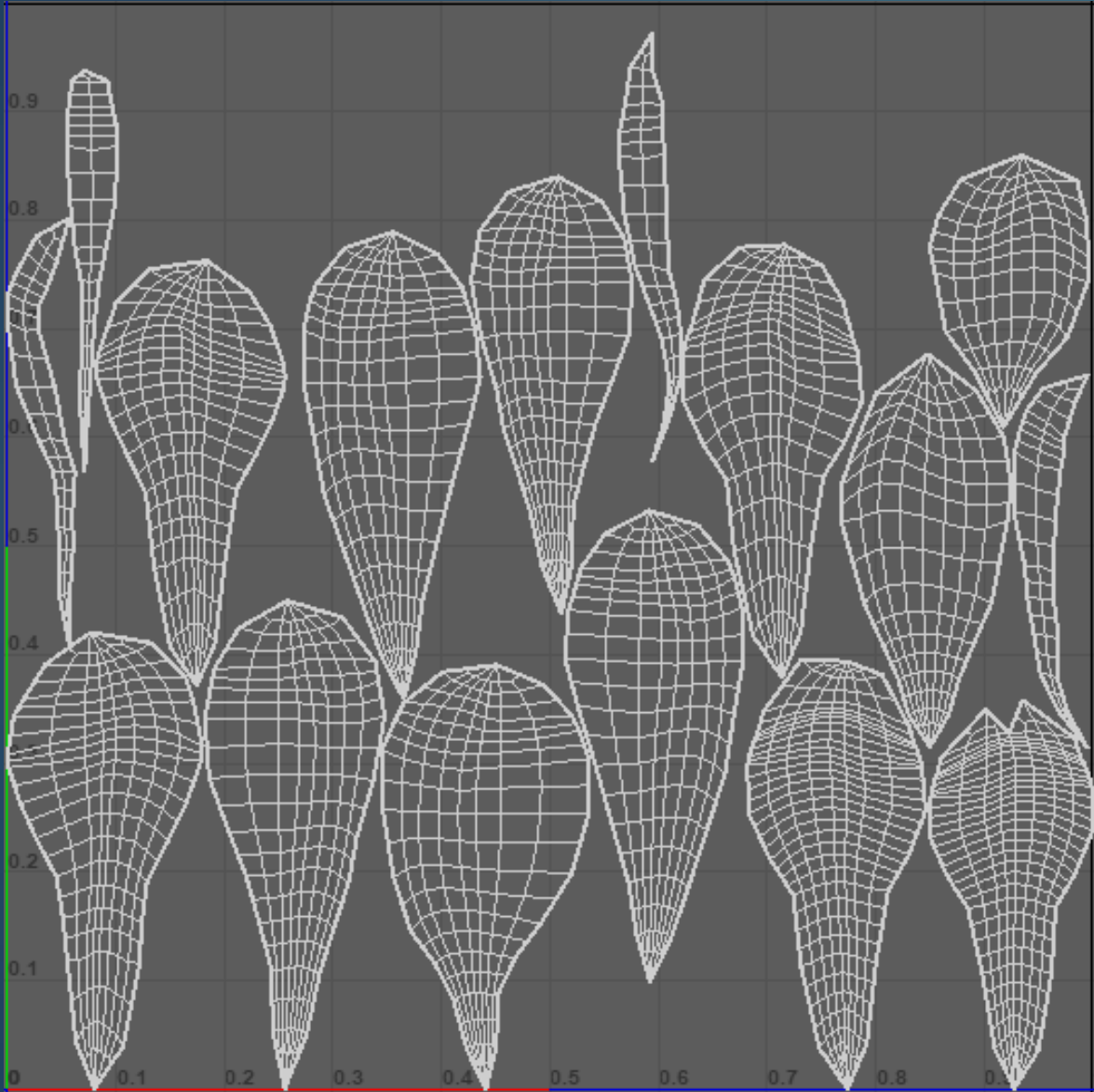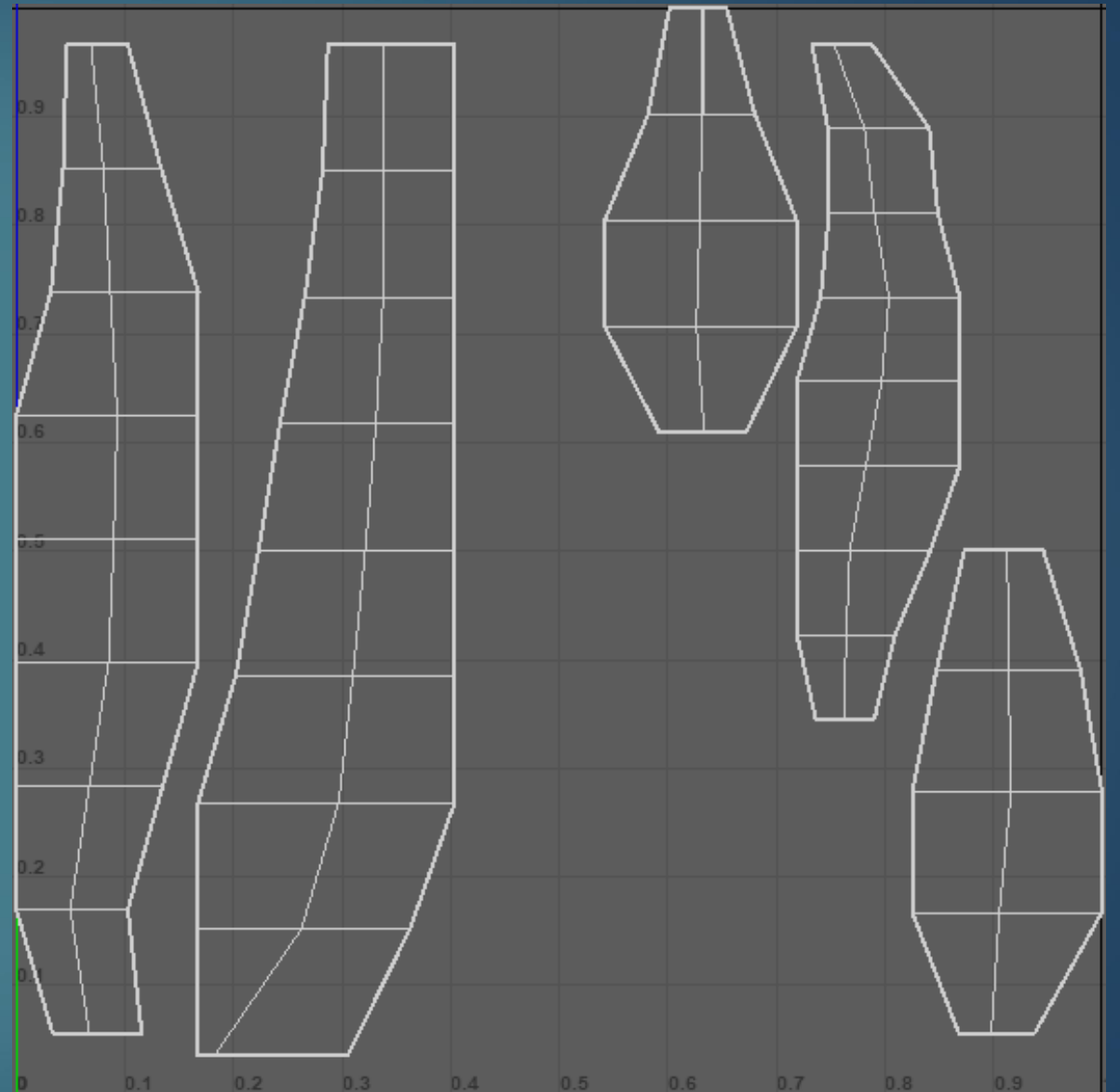**Armour and Clothing Texture Sets:**

Head Texture Set:

Body Texture Set:

Head and Body Texture Sets:

Hair Texture Set:

Feather Texture Set:
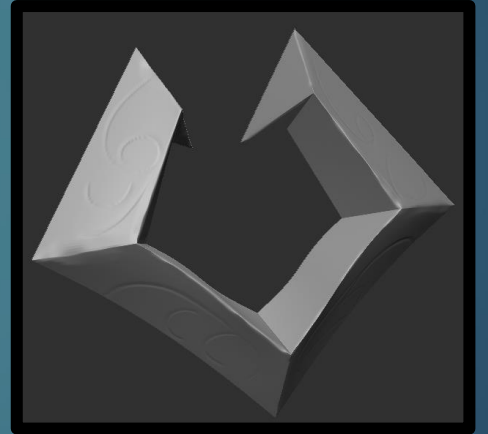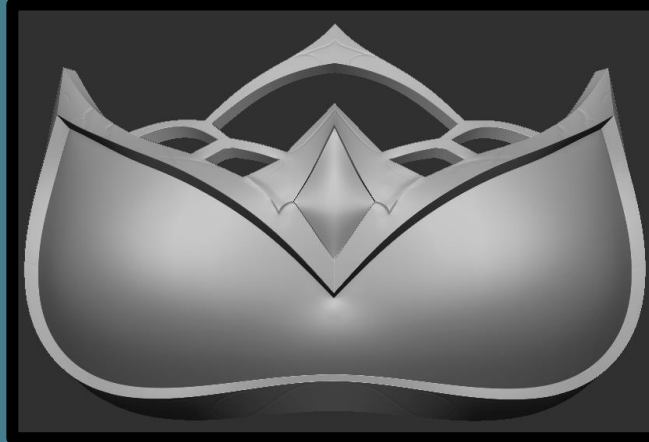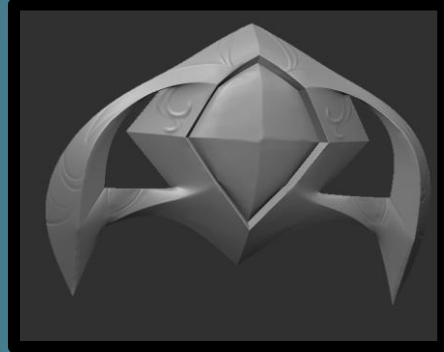
Hair and Feather Texture Sets:
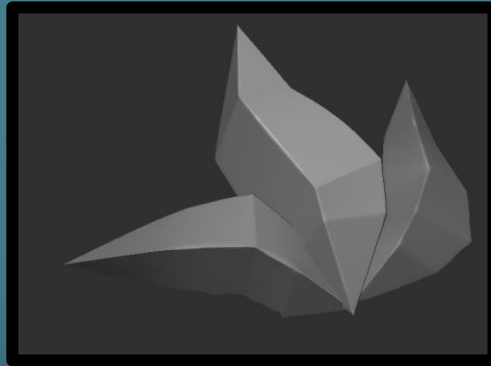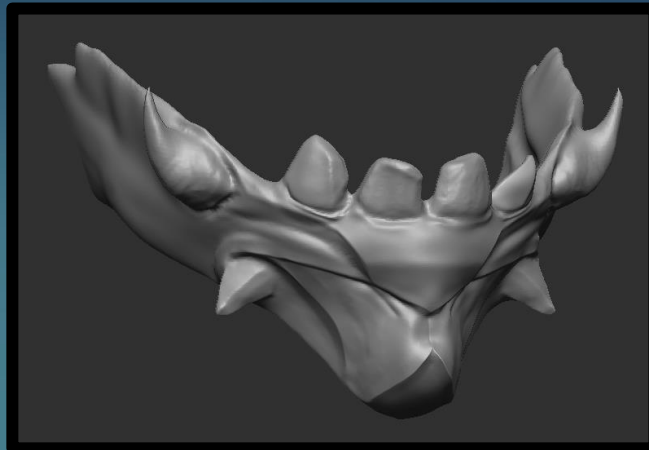
Refined Highpoly Meshes:

Complete Highpoly Model:

My first time using and baking in Marmoset.

After a lot of research, watching videos or reading through forums. I was able to get clean bakes.

At this point, I was ready to start texturing.

High to Low Poly Baking in Marmoset:
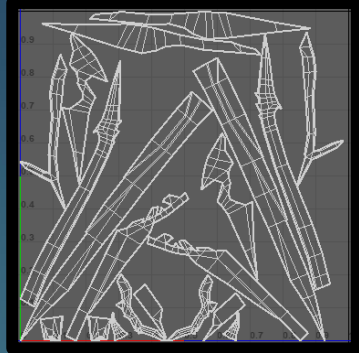
I made the weapon quick and didn't optimise the UV as it was a late addition to the project. The textures still turned out well generally speaking.

Weapon Creation:

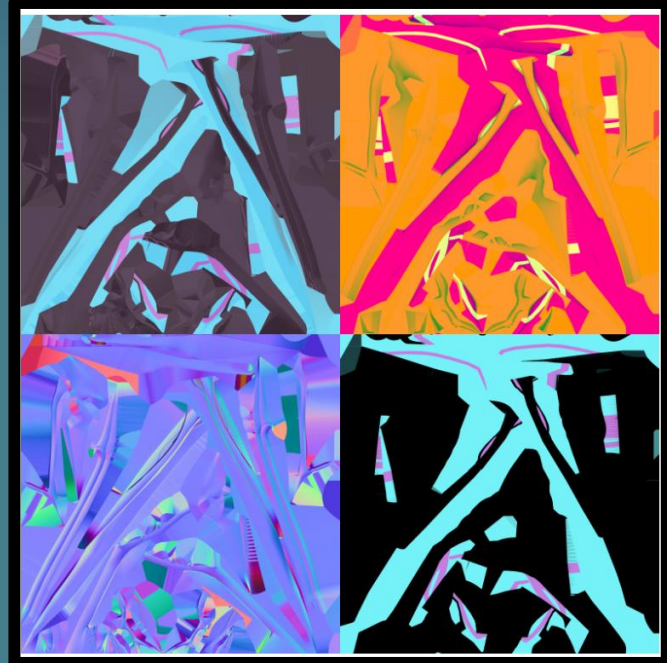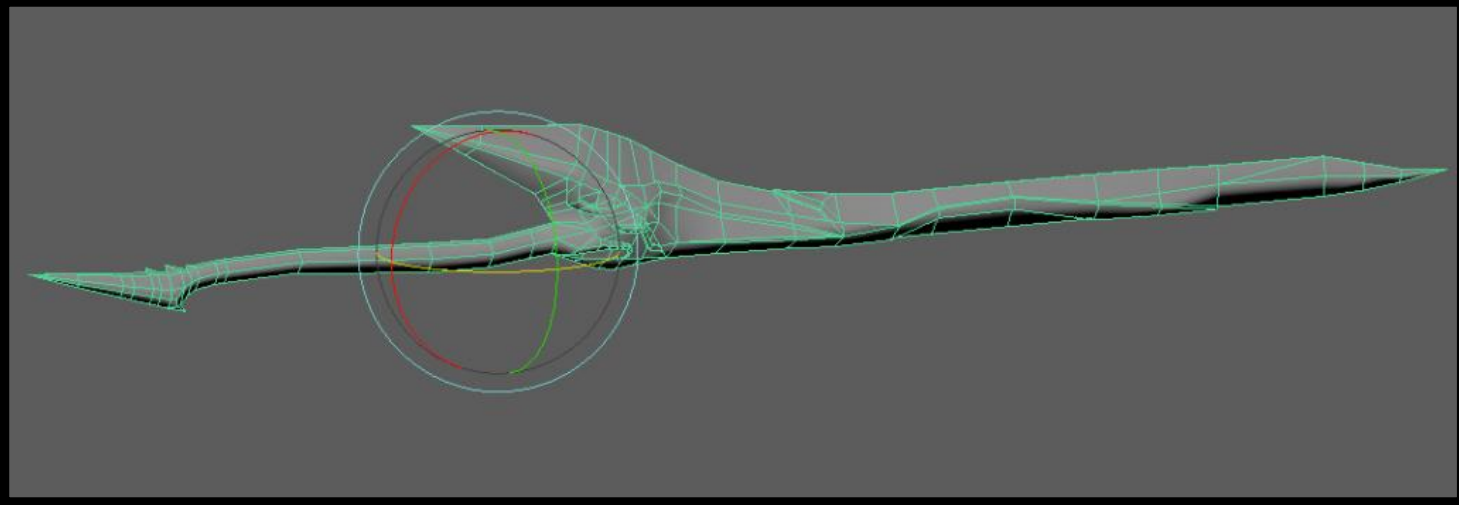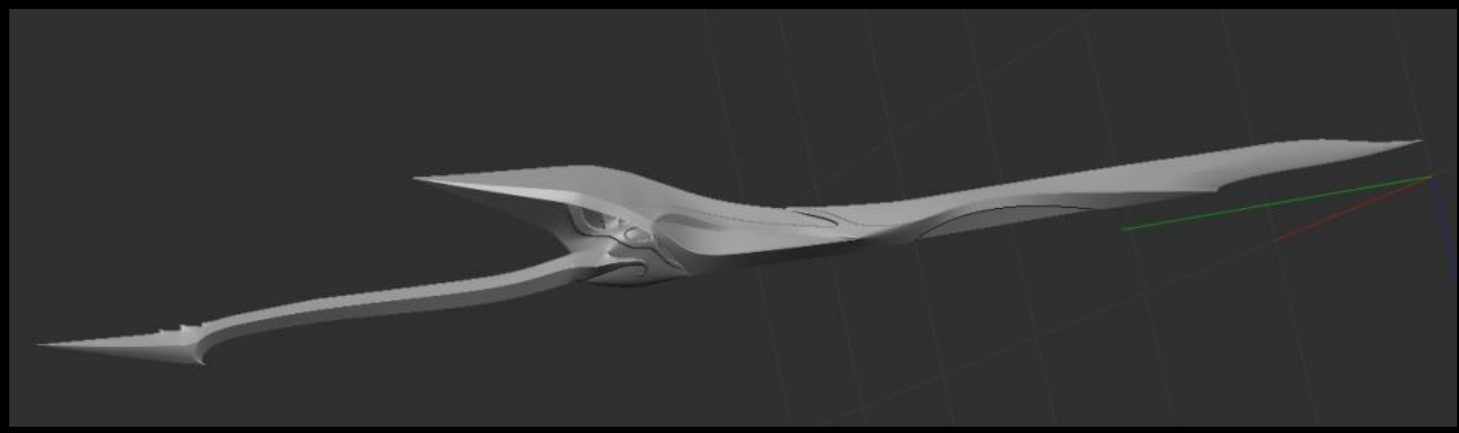Hand painted the lighting on face like they do for actual League of Legends character models.

To ad texture to the hair, I used a combination of the fur textures and stretch them out long enough to mimic hair strands.

I don't need to texture the eyes since I plan on using UE5's meta human eyes that are free and provide slider controls to adjust them however I like.
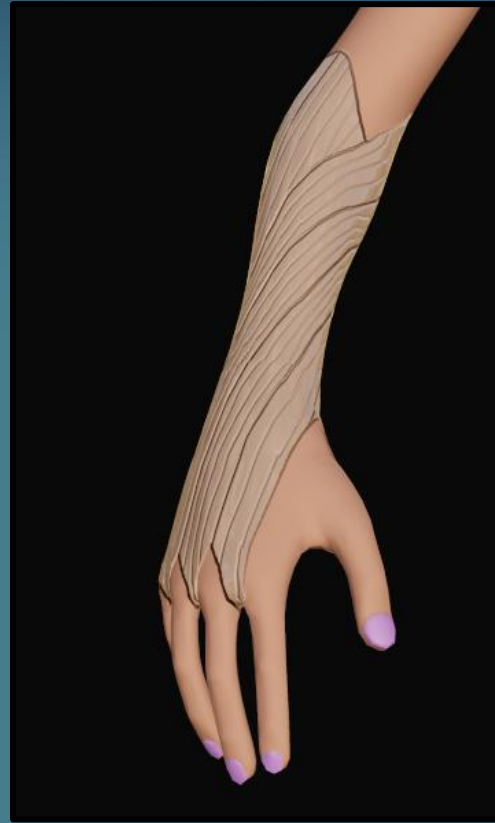
These details have been added to the character through the texture itself by hand painting height information.

Hand painted the lighting by the collarbone.

Head and Body Texturing in Substance Painter:
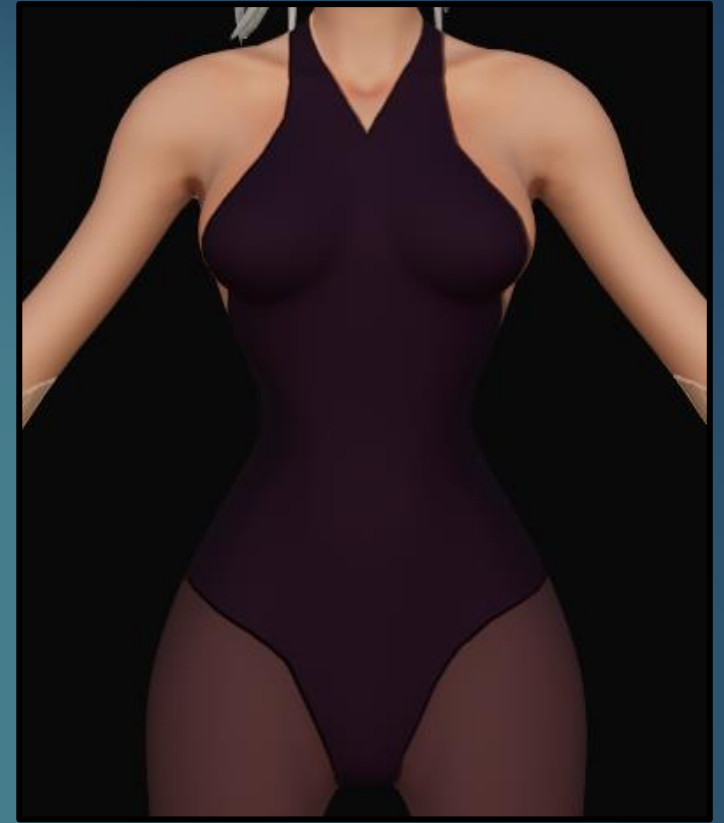
I applied the materials I thought looked like the same materials in the splash art.
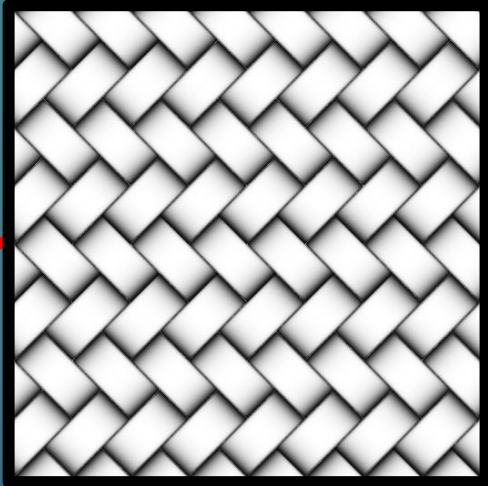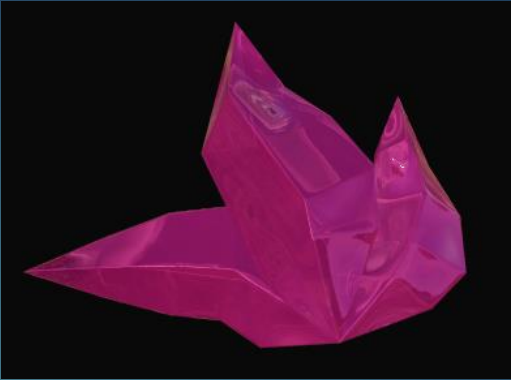
I hand painted my own designs on the back of these assets since I had nothing to go off.

I tried mimicking the front and adding some symbolism for the wings etc.

Diamonds share UV

Clothing Texturing:
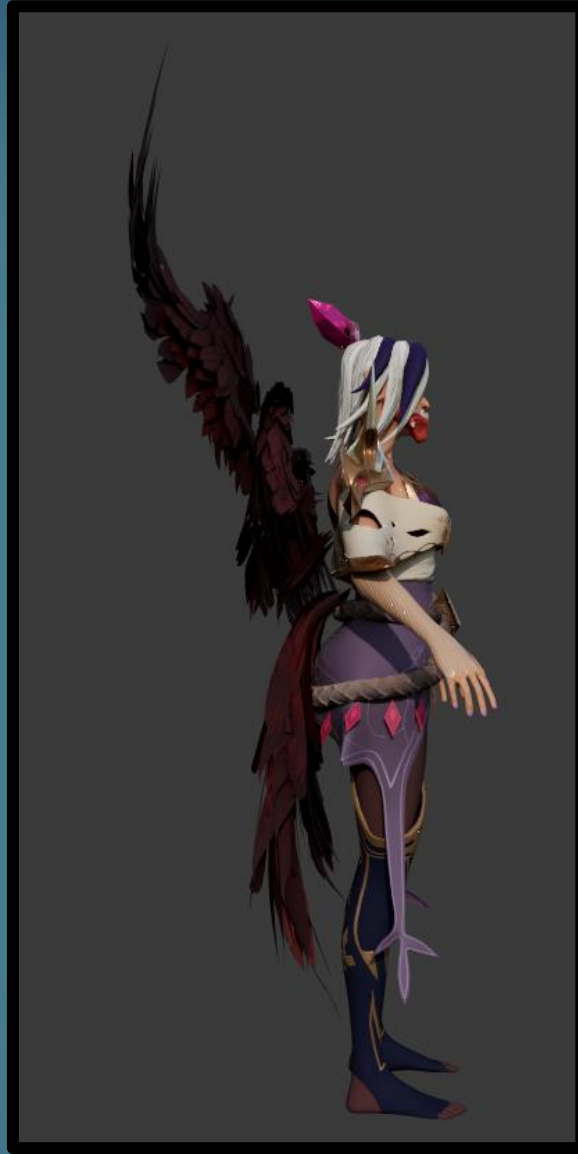
Texture overall looked good and had likeness to the original concept.

Substance Painter HDRI Lighting:

Texture Maps – Base Colour Maps 01 (2048 x 2048):
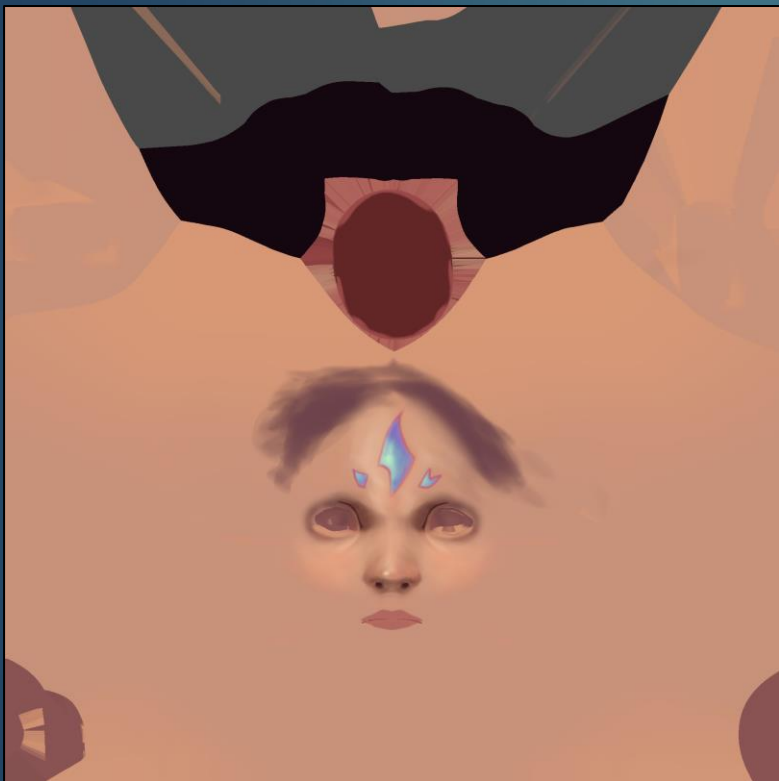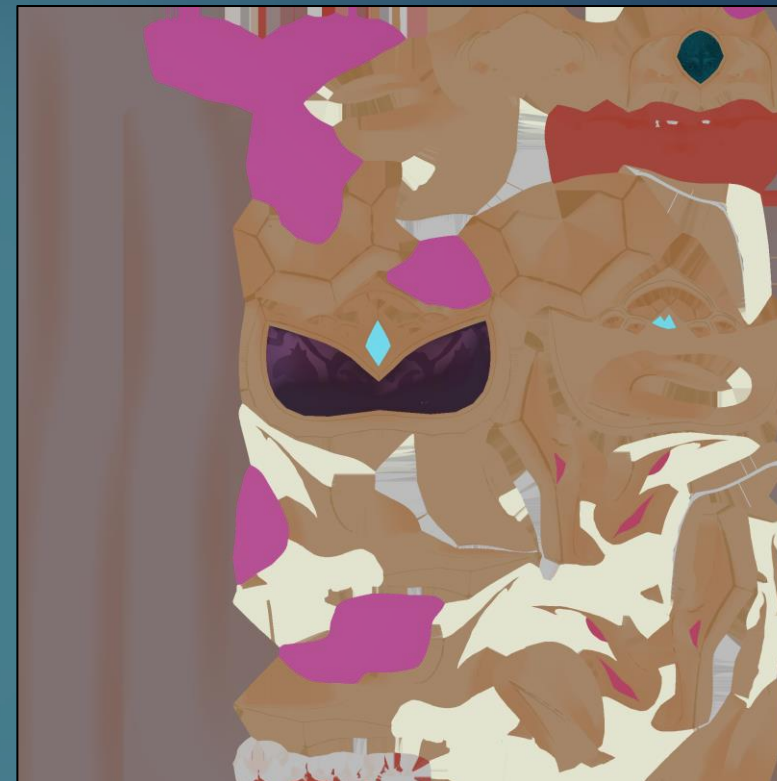
Clothing Base Colour:

Hair Base Colour:

Feather Base Colour:

<u>**Texture Maps – Base Colour Maps 02 (2048 x 2048):**</u>
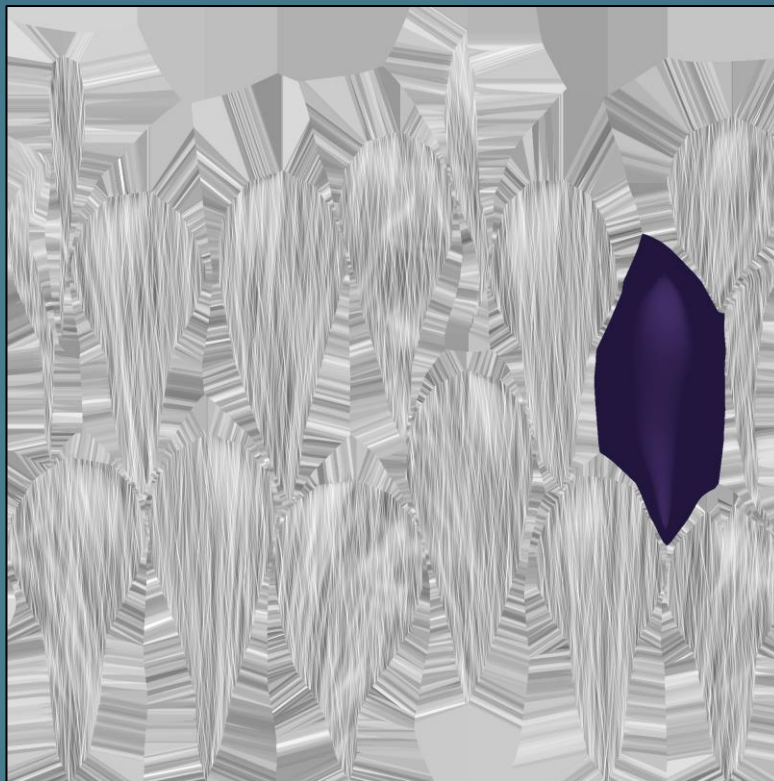
Head Normal:
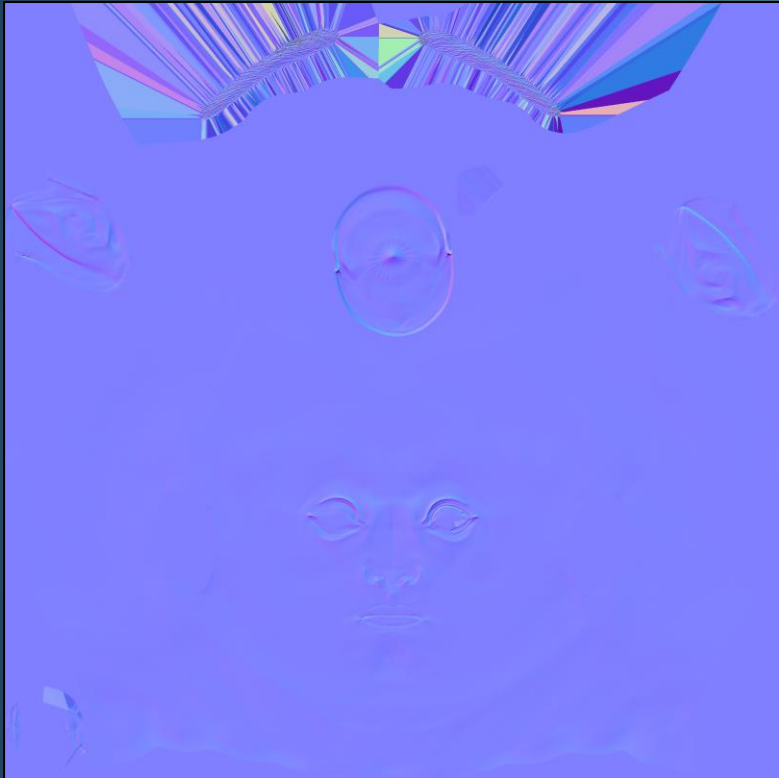
Body Normal:

Armour Normal:
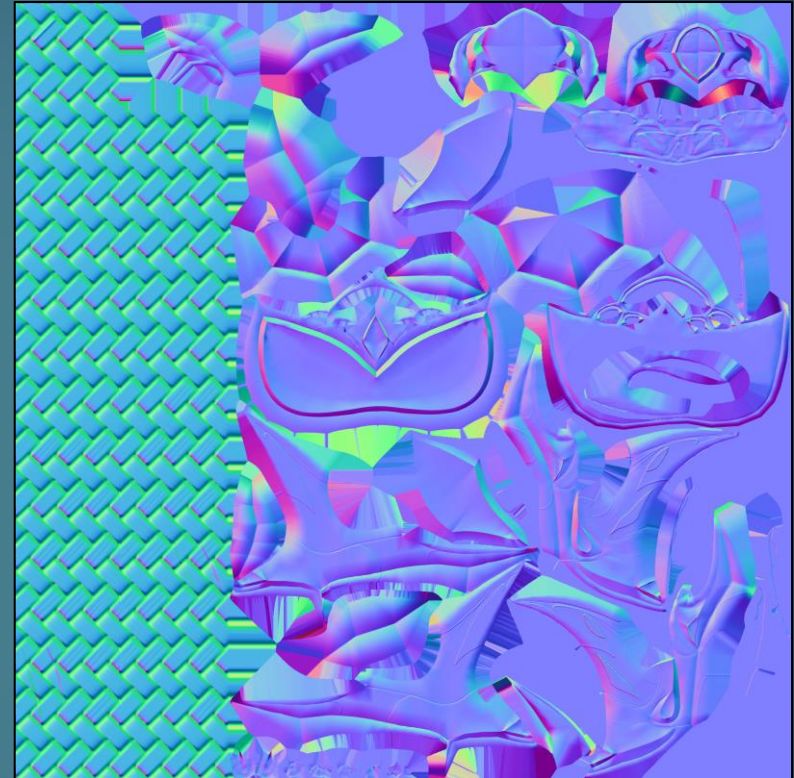
Clothing Normal:
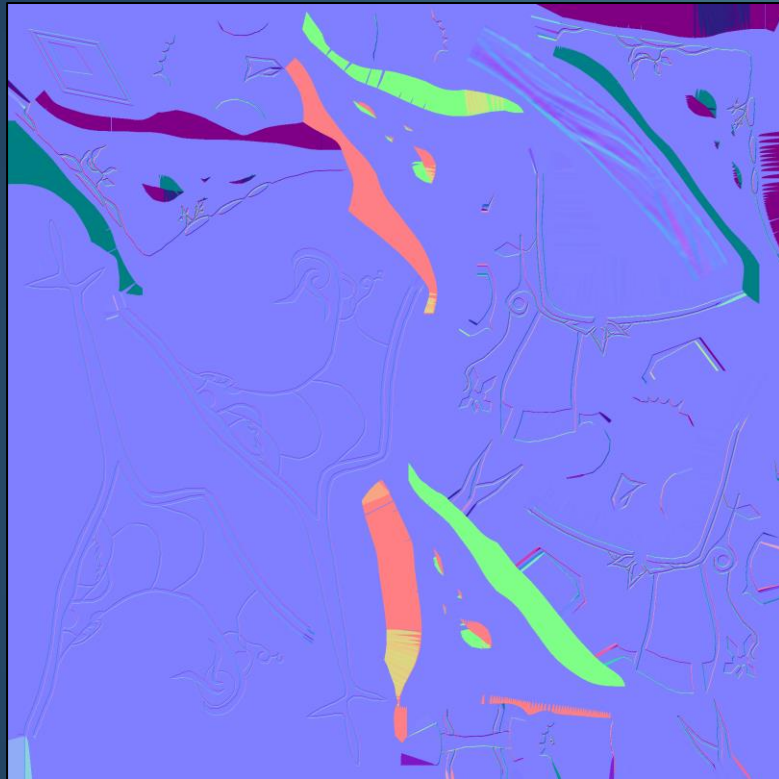
Hair Normal:

Feather Normal:

Texture Maps – Roughness Maps 01 (2048 x 2048):
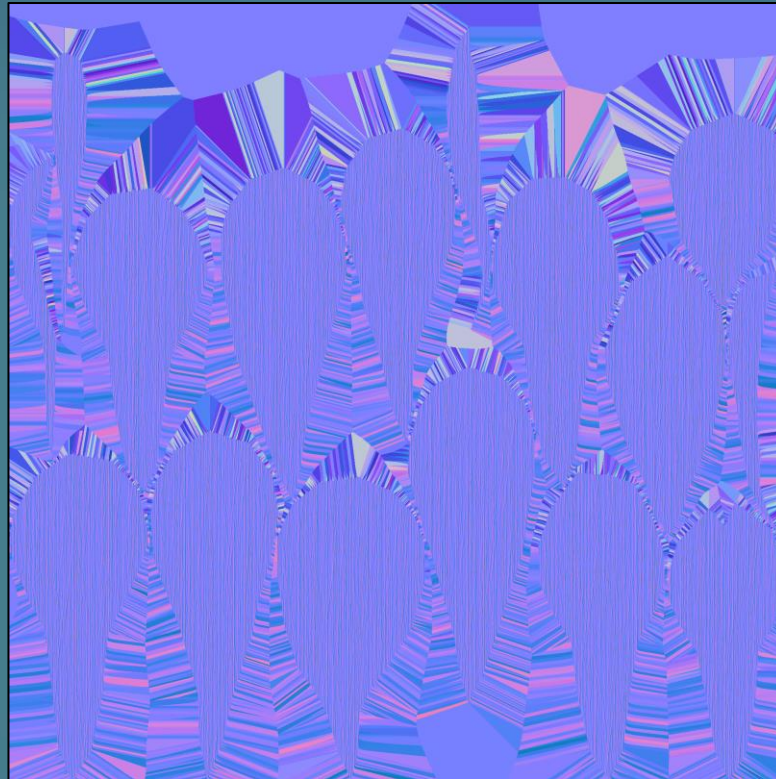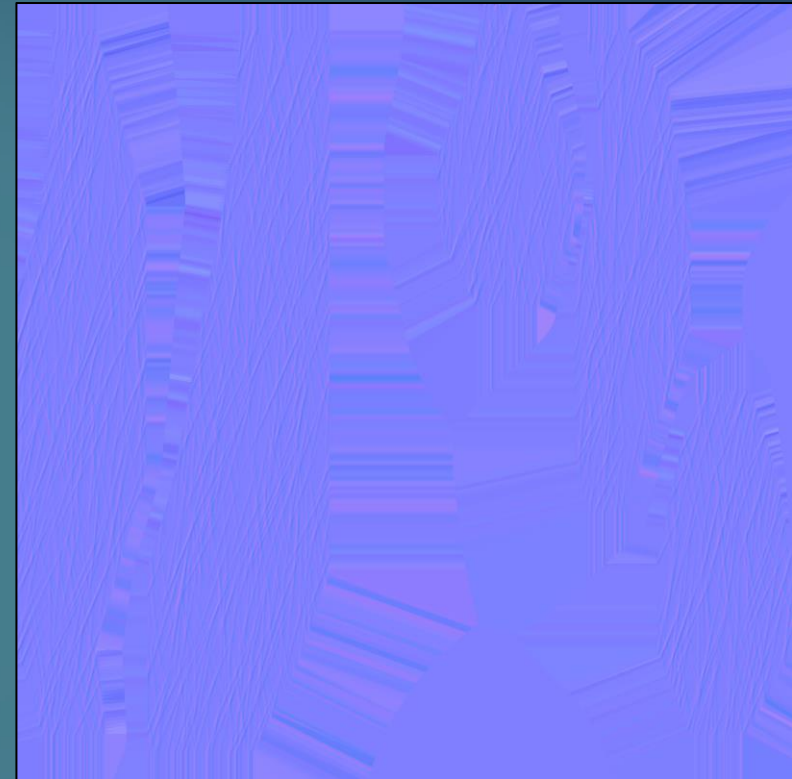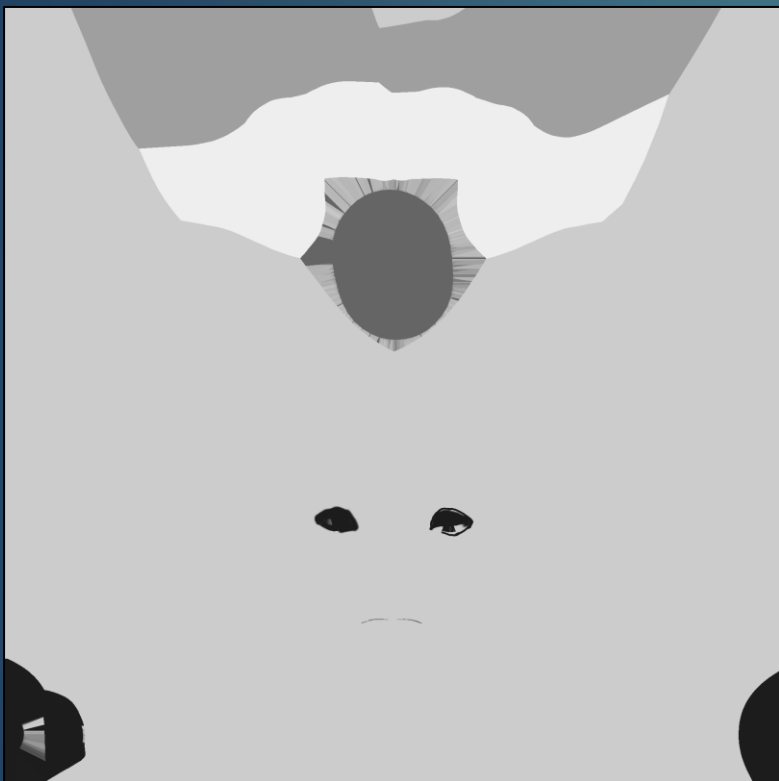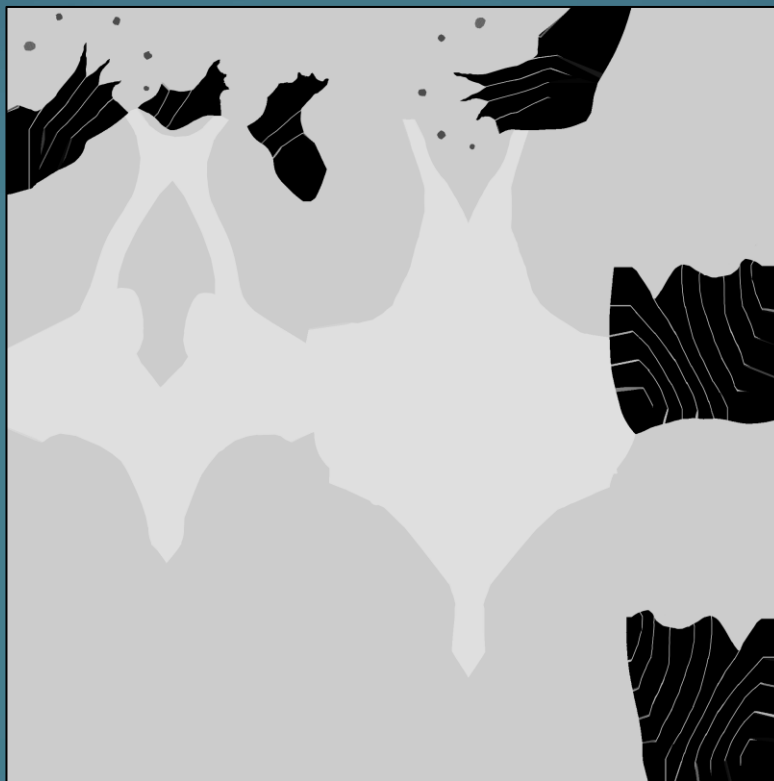
Clothing Roughness:
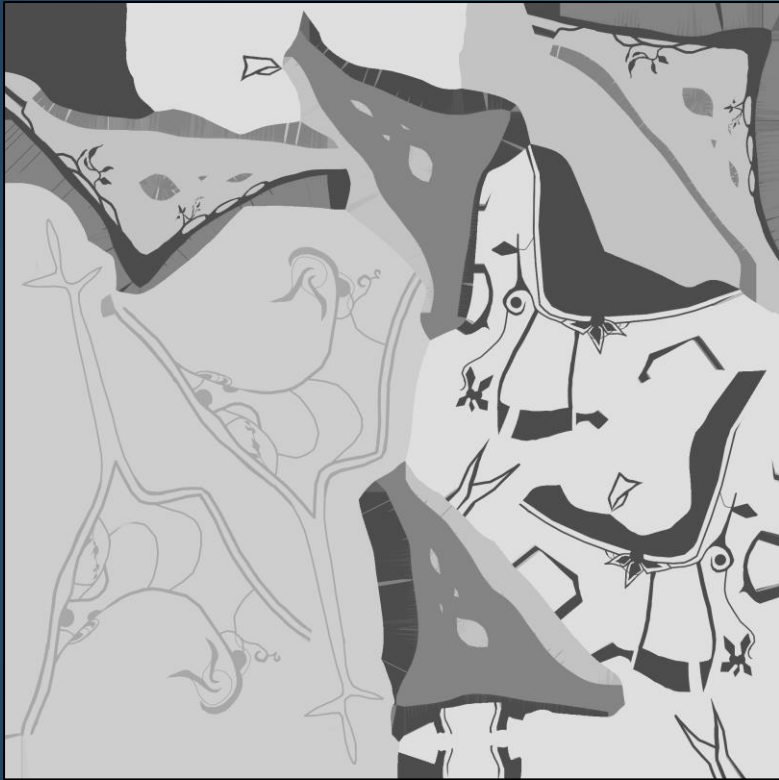
Hair Roughness:
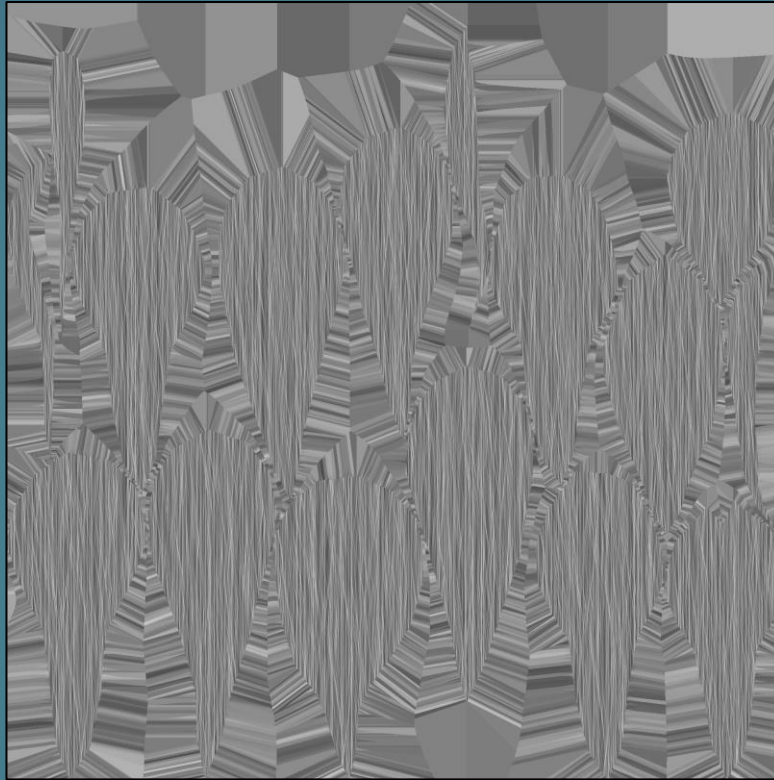
Feather Roughness:

Texture Maps – Roughness Maps 02 (2048 x 2048):
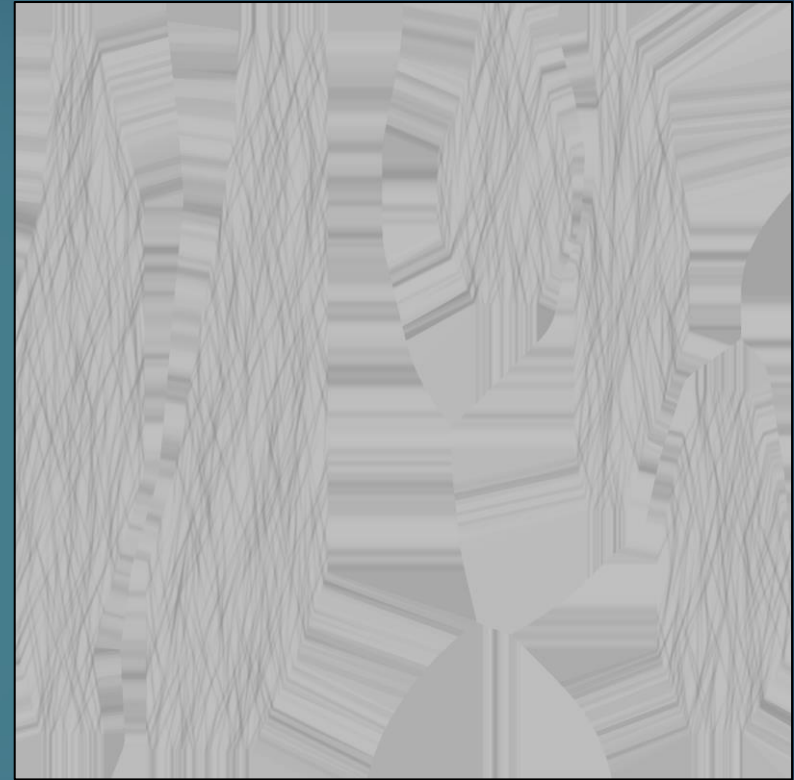
Head AO:

Body AO:

Armour AO:

Texture Maps – Ambient Occlusion Maps 01 (2048 x 2048):

Texture Maps – Ambient Occlusion Maps 02:
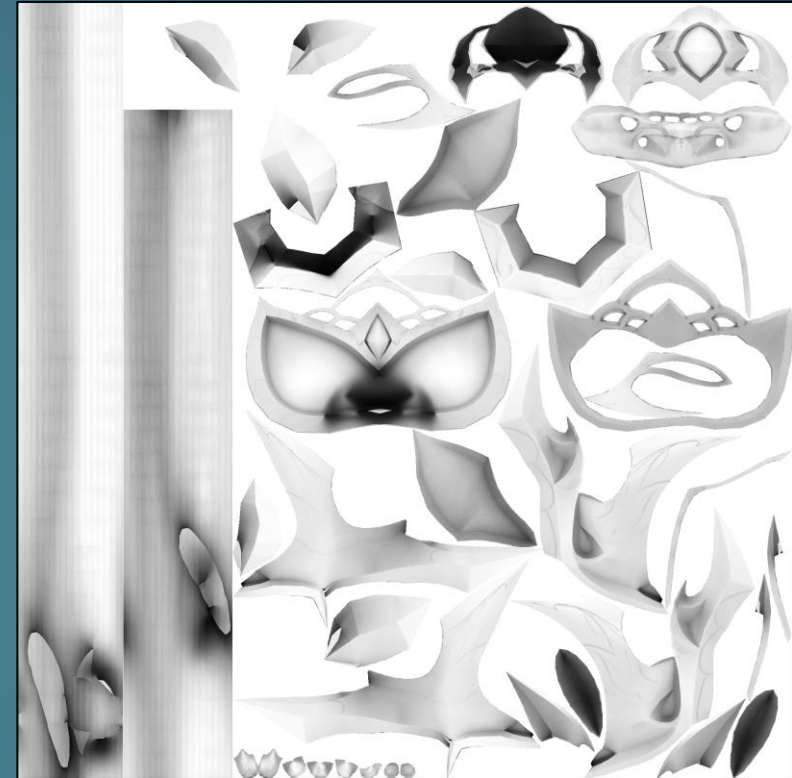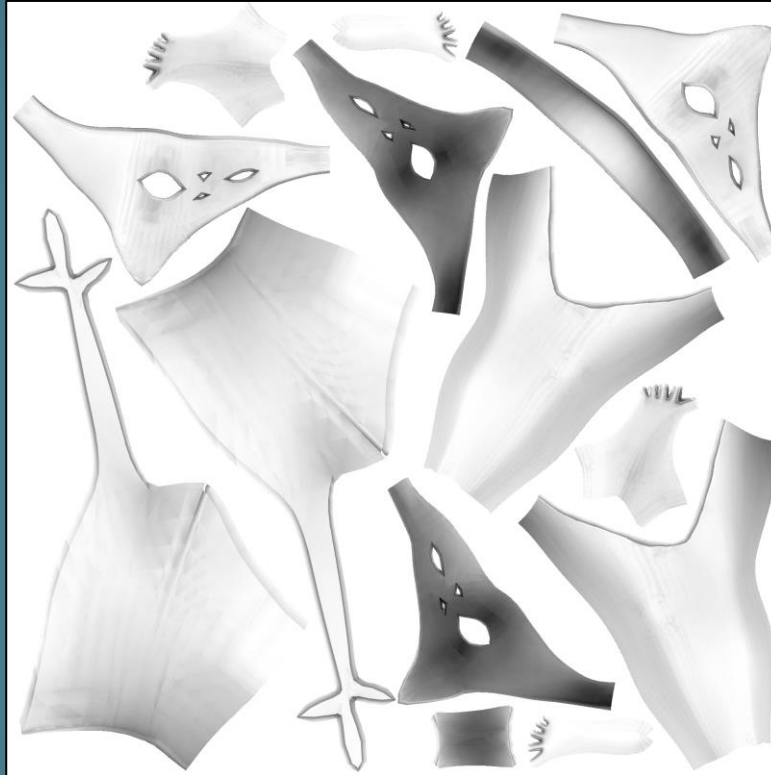
Body Metallic:

Armour Metallic:

Clothing Metallic

Texture Maps – Metallic Maps (2048 x 2048):

Using constraints, I parented objects that I don't want being deformed by skin weights. This includes:

- Shoulder pads
- Chest Piece
- Mask
- Wings
- Emblem
- Buckles
- Hair
- Eyes
- Eyelashes and Eyebrows
- Hair Gems

This will save a lot of time when skinning and rigging because I won't need to fix any unnecessary skin weights.

I took the UE5 Mannequin Skeleton and adjusted it to fit my character better. This is the main benefit of using the UE5 character proportions.

Rigging in Maya:

Posing + Render:

Cubemap — daylight
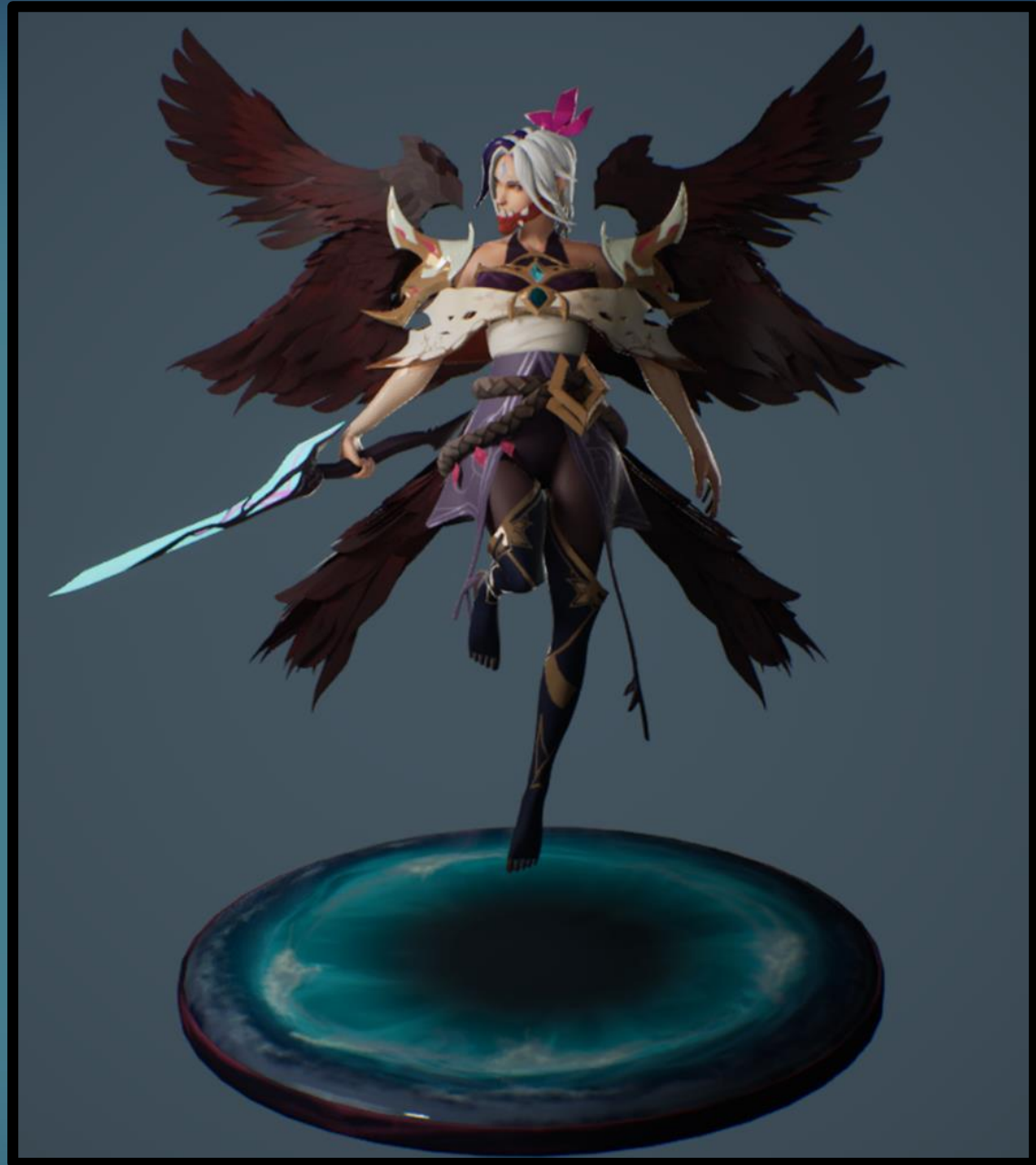
This is the lighting set up that uses:

- 2 Rim Lights
- 2 Fill Lights
- 1 Key Light
- 1 Beneath Light
- 1 Spotlight
- Skylight

The sky light also has a daylight HDRI applied to it for more general light.

UE5 - Lighting Setup:
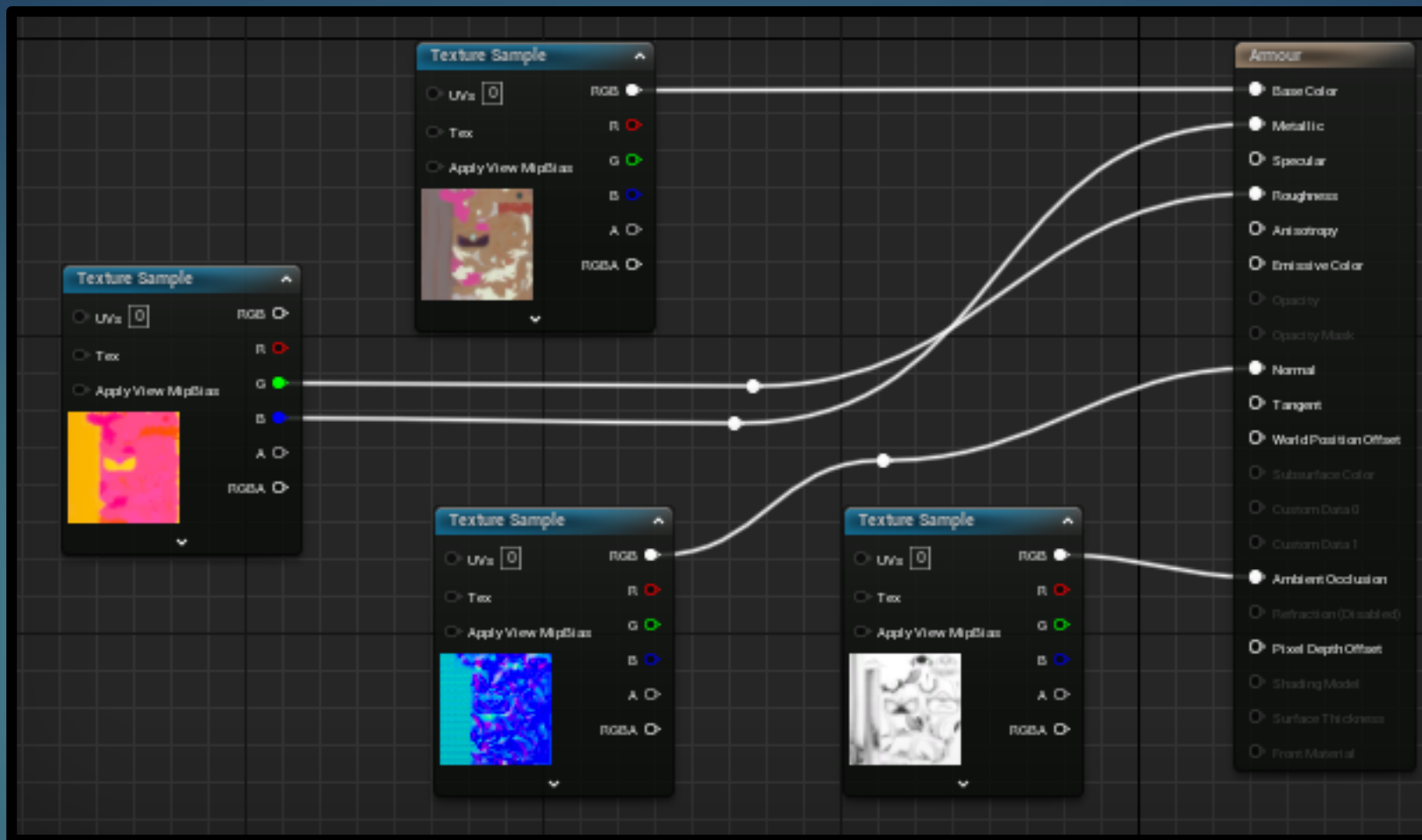
This is how I set up all of the materials in this scene. The reason why I use a mixed map but have a separate ambient occlusion map is because I baked the AO in Marmoset but never applied the map to Substance so it didn't include AO in the texture export.

UE5 - Material Setup:

Setting

Unsaved Config *

- ▼ Exports
  - .png Sequence [8bit]
- ▼ Rendering
  - Deferred Rendering
- ▼ Settings
  - **Output**

File Output

Output Directory	C:/Users/ryry-/OneDrive - ;
File Name Format	{sequence_name}.{frame_nu}
Output Resolution	3840 2160
X	3840
Y	2160
Use Custom Frame Rate	☐
Output Frame Rate	24 fps (film)
Override Existing Output	☑

Advanced

Zero Pad Frame Numbers	4
Frame Number Offset	0

Frames

Handle Frame Count	0
Output Frame Step	1
Use Custom Playback Range	☐

A list of {format_strings} and example values that are valid to use in the File Name Format:

level_name => MetaHumanSample
sequence_name => RenderKayle
job_name => RenderKayle

Cancel   **Accept**

RenderKayle

Level Sequence

Layers

Search Layers

👁 Kayle

I used a Cine camera to render my shots and after taking some renders with opaque backgrounds, I started to render with the alpha channel enabled to get some PNG images of just the character and diorama.

UE5 – Render Method:

UE5 - Rendering:

UE5 – Close-Up Rendering:

There was a sufficient amount of reference gathered and initial research done in the form of paintovers and analysis. More research early on could've been dedicated to Marmoset because a lot of time during the baking process was spent researching and experimenting because it had been left too late.
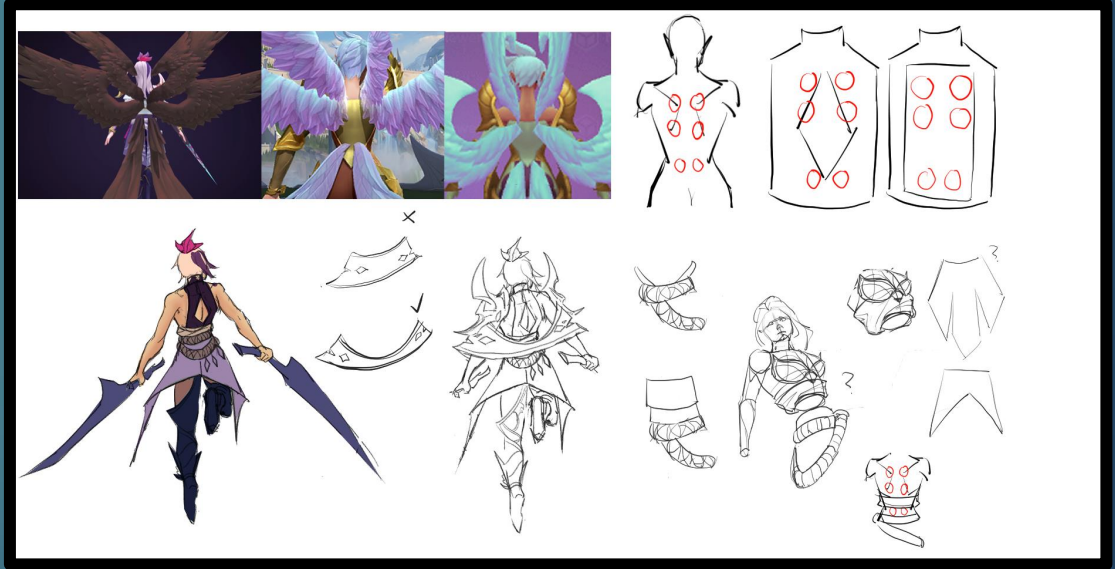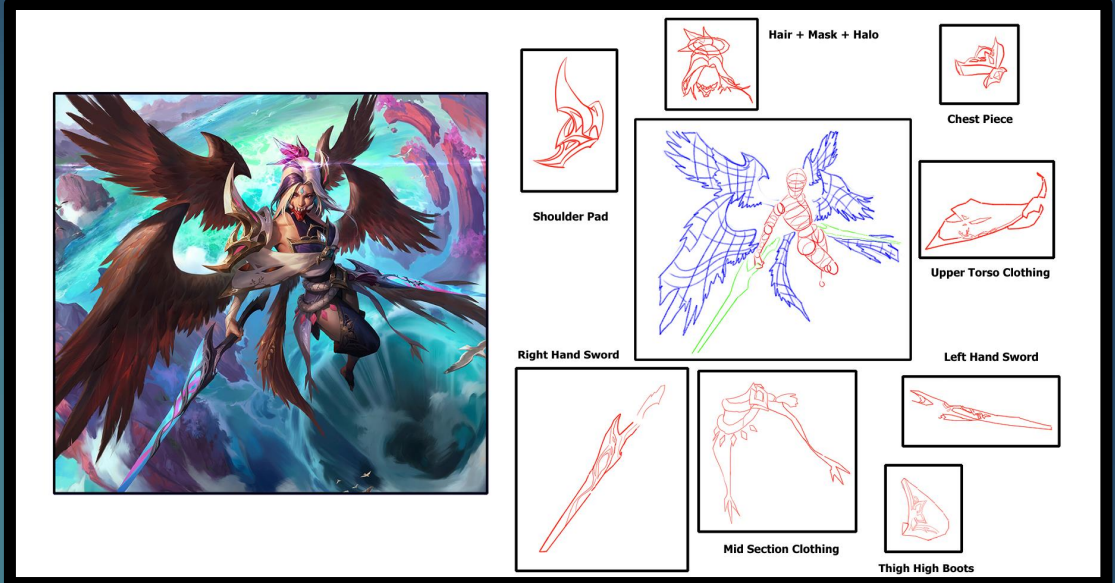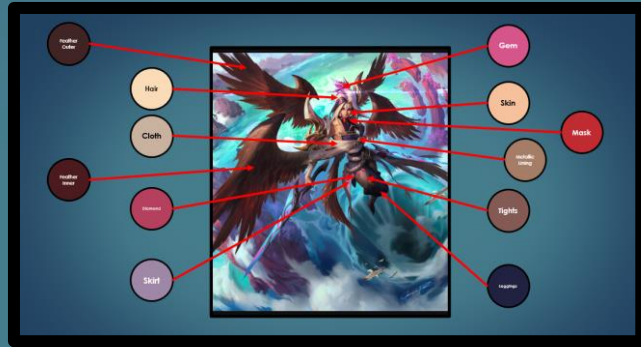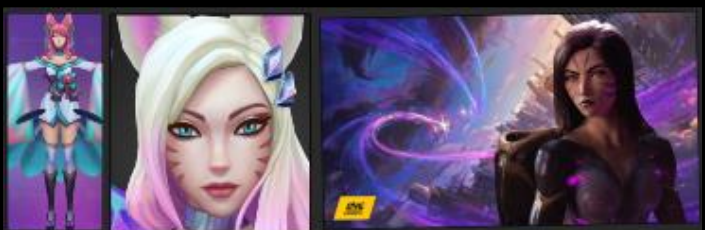
Evaluation - Research:

https://www.artstation.com/artwork/W2OVlv

The high poly model was done to an okay degree but lacks detail. A lot of time was done working on the proxy model which didn't contribute too much to the final product. Showcasing the model is also a weak point and lacks presentation besides the perspective views.

On the other hand, the meshes that did have high poly counterparts looked good and worked well during the baking process. A definite improvement would be to rely less on the texturing process to achieve higher detail and rather include the details in the sculpt instead.

The example shown, made by MD Ridhwan Borha, is presented nicely with good lighting and high detail. It's evident that more research and practice into rendering in Zbrush should be a priority to improve.

Evaluation - Highpoly:
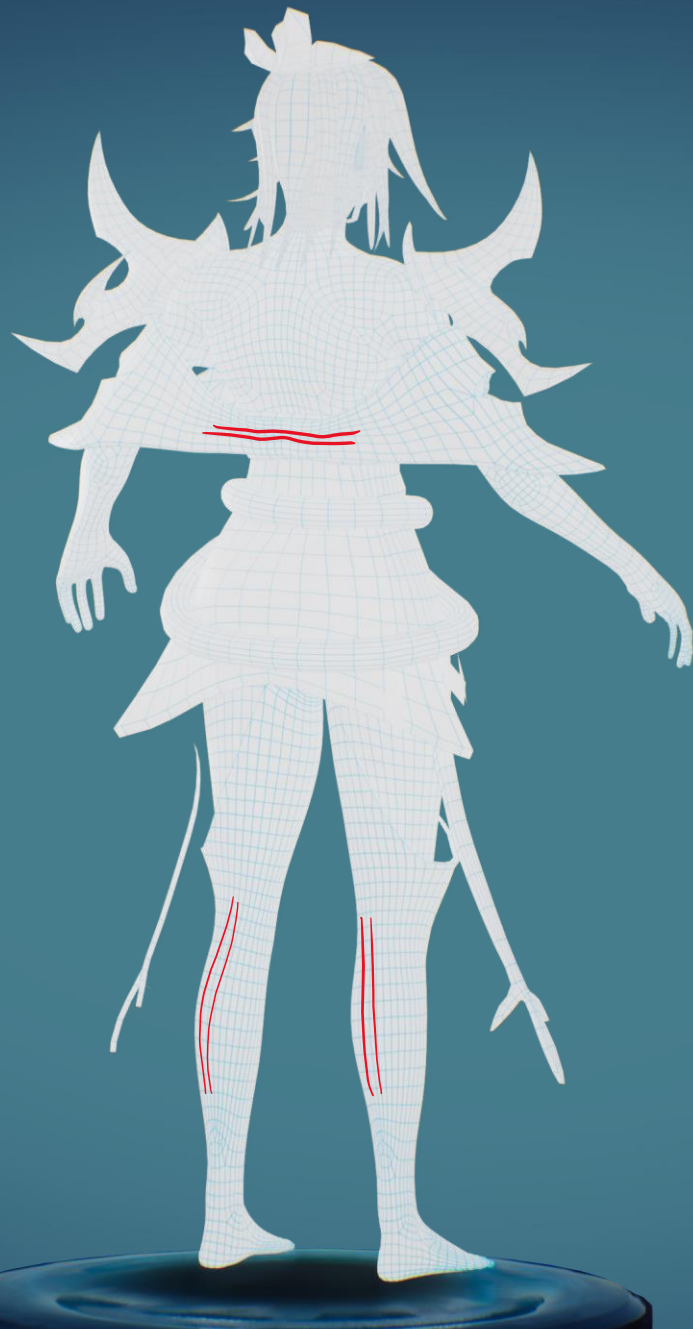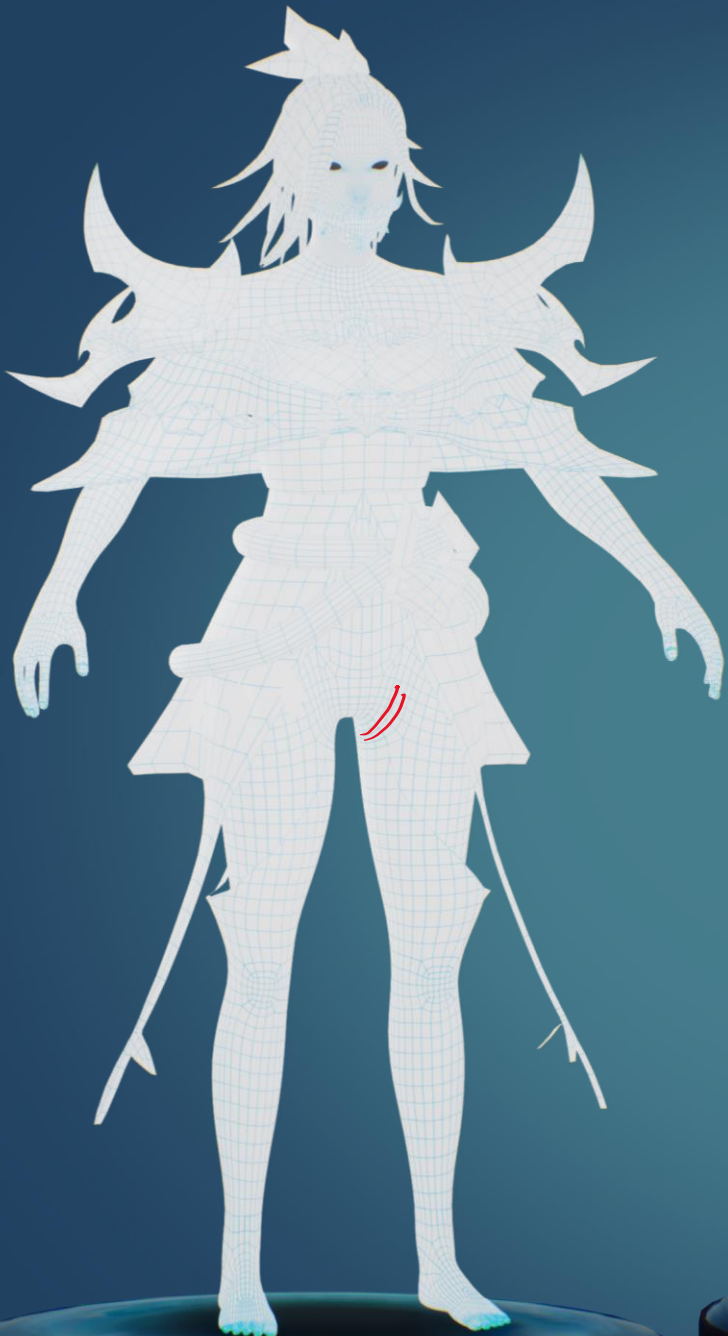
The retopolgy is one of, if not the strongest part of the character model. Tri count was kept low for the complexity of the design and overall density was kept consistent throughout the model.

Besides the head being quite dense, the areas marked in red are minor areas that could've been reduced in topology.

Animation loops works well however, the facial loops never got tested which would've been a way to improve presentation.

Evaluation - Retopolgy:
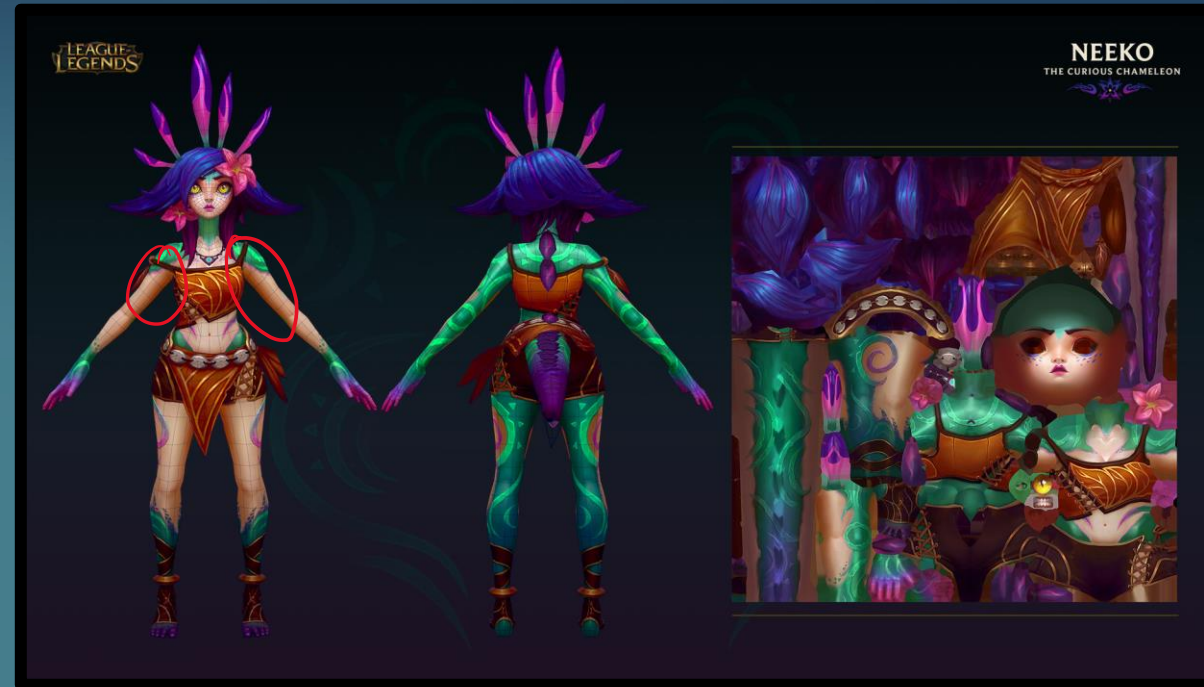
Compared to this example, made by Daniel Orive for the Neeko in-game League of Legends model, the character clearly lacks base colour variation and detail. The example uses one texture set and looks super detailed just from the base colour map. More time should be spent refining the base colour before adding any sort of material property such as metalness and roughness to ensure the texture doesn't rely on them.

Subsurface scattering could've been applied to the model due to insufficient time, however, it may have been possible to fake subsurface detail like shown in the Neeko model beneath the armpit where the skin appears more orange and glowy.

Evaluation - Texturing:
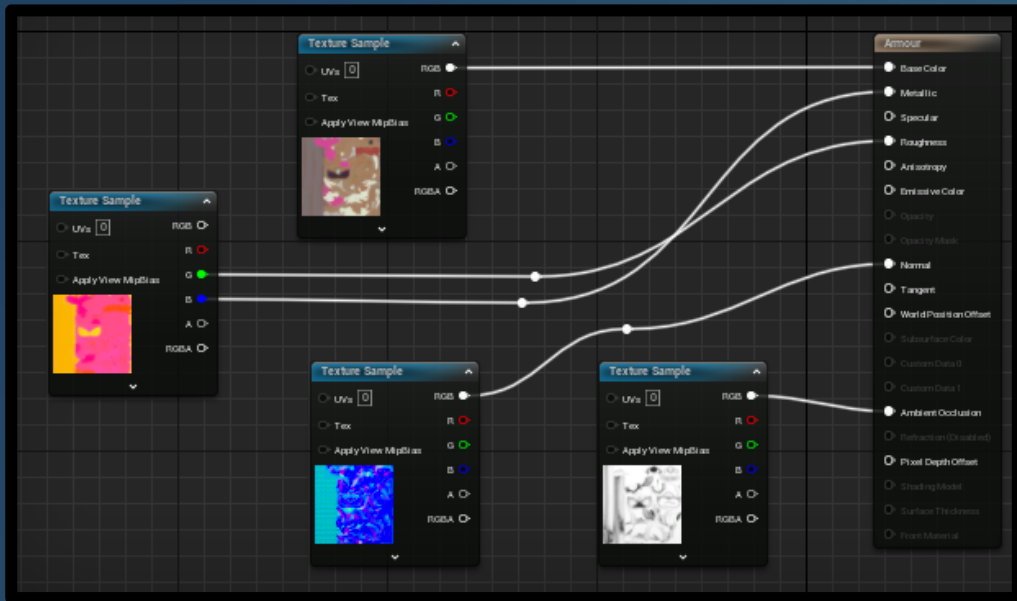
Implementation of textures and materials was very simple and lacklustre. An easy and simple improvement could've been to add a roughness and metalness slider to each material just to experiment and have more control over the textures.

A subsurface scattering node would've been nice, and very possible since thickness and scatter maps were baked from Marmoset.

Render-wise, they turned out well, although the diorama may be too large and and high contrast. The character also lacks a brighter light to make it pop and draw the views attention more.

Evaluation – UE5 Implementation and Rendering:

Overall, the character turned out well but because of poor presentation throughout, the inexperience shows. A few more poses would've helped to explore the character besides the pose that was already provided in the splash art; such as the concept art pose perhaps.

The area that needs the most improvement by far is time management, as many of the issues I faces in the late term, wouldn't have happened if I spent more time planning and less time experimenting with a pipeline I read about in the early weeks of the project.

Evaluation – Closing Thoughts: