

Aglaia Spiliopoulou

Thesis Book

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Artist Bio

Aglaia Spiliopoulou is a character artist who is interested in bringing characters to life. She is passionate about character concept art and 3D Character Design. She wants the characters to affect gameplay in a psychological way. She believes that characters can have an impact on the person who plays them.

Education

BFA Animation and VFX
Austin Peay State University
Expected graduation, May 2022

Experience

Character Design 2021
Collaborative Zine Project
(Spring 2021)
Team of four students creating
a character concept art zine.
Published and distributed at Austin
Peay State University.

Molasses Mayhem
Anim collaborative project
(Fall 2021)
A class of twelve students
collaborated to create a short
animation of a video game loading
screen for a 2D fighting game. I
was responsible for creating the
character concepts and animated
one of the characters' 2D idle cycle.

Halloween after Covid
24-Hour Animation Contest
(Fall 2021)
Team of five artists creating a 30
second animation in 24 hours.

Contact info

E-mail: aglaiaspi@gmail.com
Artstation: [cevuss.artstation.com](https://www.artstation.com/cevuss)
Vimeo: vimeo.com/user155499895

Software

Adobe Suite
Maya
Zbrush
Substance Painter
Marmoset Toolbag
Toonboom Harmony
Nuke
Krita

Skills

Concept Art
Digital Painting
3D Modeling
Digital Sculpting
3D & 2D Animation
3D & 2D Rigging
Film VFX

Languages

Greek
English

Thesis Pitch

I will create a stylized character for a first person shooter game.

Thesis Written Proposal

I will be creating a stylized 3D character for a first person shooter game. I will be using Maya, Z-Brush, Substance Painter, and more if needed. I will block, sculpt, model, retopologize, UV, texture, rig, and pose the character.

Story Development

Everything is taking place in a world where people who are called Guardians fight to protect the deities of their communities. However, that is not always the case. Betrayal, hate, revenge, religion, and viewpoints all play a big role in who is going to conquer all. Some want to protect their communities from corruption and war, and some others simply want to conquer, and gain control and power. The communities are split into different islands. The middle island is called the Island of Creation due to the stone that can create land. Once the stone is used it returns back to the island that consists of different areas called Layers. The stone is able to create only a small part of land per use. Therefore, this is a continuous fight between communities. When are they going to stop and choose peace?

Learning Outcomes/Goals

I would like to learn how to use different software that i have not used before. I always wanted to learn how to make 3D characters and always have thought that it was super complicated. In the future i would like to work more with 3D as well as work with different artists i admire and hopefully create my own game in the future. I want to know how video game characters are made.

Task List

1. Research and References
2. Software Testing (Z-brush, Maya, Substance Painter)
3. Character Design Sketches
4. Character Design Turnaround
5. Character Blocking in Z-brush
 - » Head
 - » neck
 - » chest
 - » belly
 - » abdomen
 - » upper arms
 - » lower arms
 - » hands
 - » upper legs
 - » lower legs
 - » feet
6. Character Sculpting in Z-brush (High Poly)
 - » merge the chest, neck, belly, and abdomen and define
 - » merge the arms and hands and define
 - » merge the legs and feet and define
 - » sculp the head, and face and define
 - » make the hair
 - » make and define the fingers
 - » make the clothing starting with the inner clothing first.
 - » accessories might be sculpted in Zbrush, or made in maya and then transfered into Z-brush to be sculpted

7. Character Retopology in Maya (Low Poly)

- » head and face first
- » the body and clothing will be one topology and then merged with the head.
- » The hair will be retopologized on its own and parented to the head so that there is separate movement to it (a different rig).

8. Character UVing in Maya

- » The UVs might be all in a single tile if everything fits and is scaled nicely, otherwise i will use UDIMs

9. Character Texturing in Substance Painter

- » I will be baking the high poly mesh into the low poly mesh
- » I will paint the character and then make maps and transfer them into back into maya
- » Normal map
- » diffuse map
- » specular/gloss map
- » illumination map
- » AO map
- » ID map
- » curvature map

10. Character Rigging in Maya

- » Create a skeleton for the body
- » paint weights
- » create a skeleton for the hair
- » paint weights

11. Pose character in Maya

12. Final Render in Maya or Marmoset Toolbag.

Gantt Chart

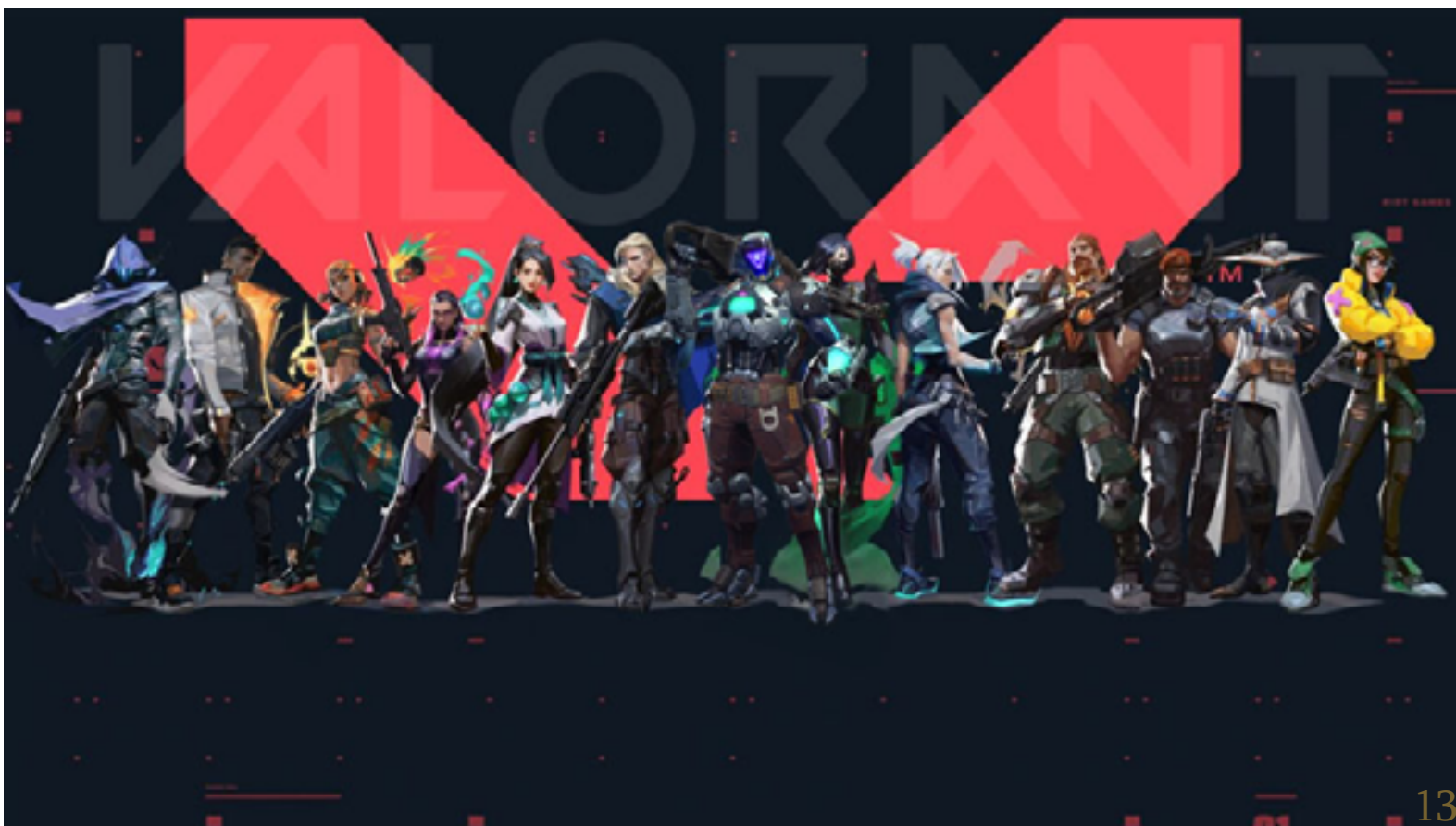
	September				October		
	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9
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Reference/Visual Research



Technical Research/Tests

scary but informative look into how blizzard has pieced together. He also included the additional layers that images go through to create the end result.



Early on in the thread, Jeff Keenan himself showed up and promised to get input from an art team member, and he delivered eventually. Thanks to Scott Goffman, Principal Tech Artist, for official information on the Overwatch player and weapon models:

**Triangle A hero's highest LOD gets 30,000, plus 15,000 for weapons (7,500 each if they dual-wield). That's not a hard cap, some heroes come as at 35-39,000, but every remaining piece from the tech art team. They usually need each hero and weapon has 4 LODs, each half the poly of*

<https://www.gosugamers.net/overwatch/news/35188-interesting-insight-into-overwatch-tech-art>

Learning the steps allows for research and knowing what your next step is. It is very useful when you need to research as you go as well. A lot of that stuff i learnt from courses i bought on Udemy. There are 2 courses i bought to help me out with the process.

Before I jumped into creating the character, I had to research character budget. In overwatch most characters have an LOD of 30k tris. Not only that, but i had to learn the process of creating a character.

Poly budgets

A compiled list of the tri counts of each hero in Overwatch

Character	Body Tri count	Weapon Tri Count	Extras Tri count	Total Tri Count	Extra notes
Bastion	26,589	11,562	2,810 (Bird)	30,962	Body count does not include weapons
D.V.A	21,903 (Mech)	14,154	19,560 (I lens)	55,617	Mask count does not include weapons. Top of Mech and Head seen to be welded at the same time
Genji	29,969	9,594	305 (Head cloth)	30,530	Head cloth is dynamic, double sided mesh
Hanzo	38,807	10,000 (Long weapon)	2,880 (Fancy Arrow)	37,867	His bow was missing in the modeling of
Junkenstein	31,842	Missing	3,670 (Wheel)	35,412	Weapon missing
Lucio	30,355	Missing	1,770 (Hair)	30,350	Weapon missing
McCree	37,222	12,119	90 (Cigar)	49,340	
Mel	45,228	Missing	2,310 (Robot)	47,538	Weapon missing
Mercy	30,736	12,079	224 (Glowy Wings)	43,039	Not the frame around the wings
Pharah	37,438	Missing		37,438	Weapon missing
Rapier	20,122	14,022		38,144	
Reinhardt	26,764	10,485		42,571	No projected shield, probably pretty low poly though
Roadhog	26,627	Missing		26,627	Weapon missing
Soldier76	26,888	10,700		31,588	
Symmetra	32,146	Missing		32,146	Weapon and turrets missing
Taric	35,908	6,804	2,380 (Pierce Hair)	45,112	Has Next gun, no turret
Trojan	36,006	Missing	2,404 (Hair)	36,096	Weapon missing
Widowmaker	30,466	14,154	2,880 (Hair)	47,500	
Winston	26,919	Missing			Weapon missing
Zarya	26,882	16,051	1,007 (Hair)	43,940	
Zenyatta	Missing	Missing	Missing	Missing	Zenyatta was unobtainable
Average	31,668	12,588		40,270	

Note: These are rough, they were collected through ripped models hence some pieces are missing.

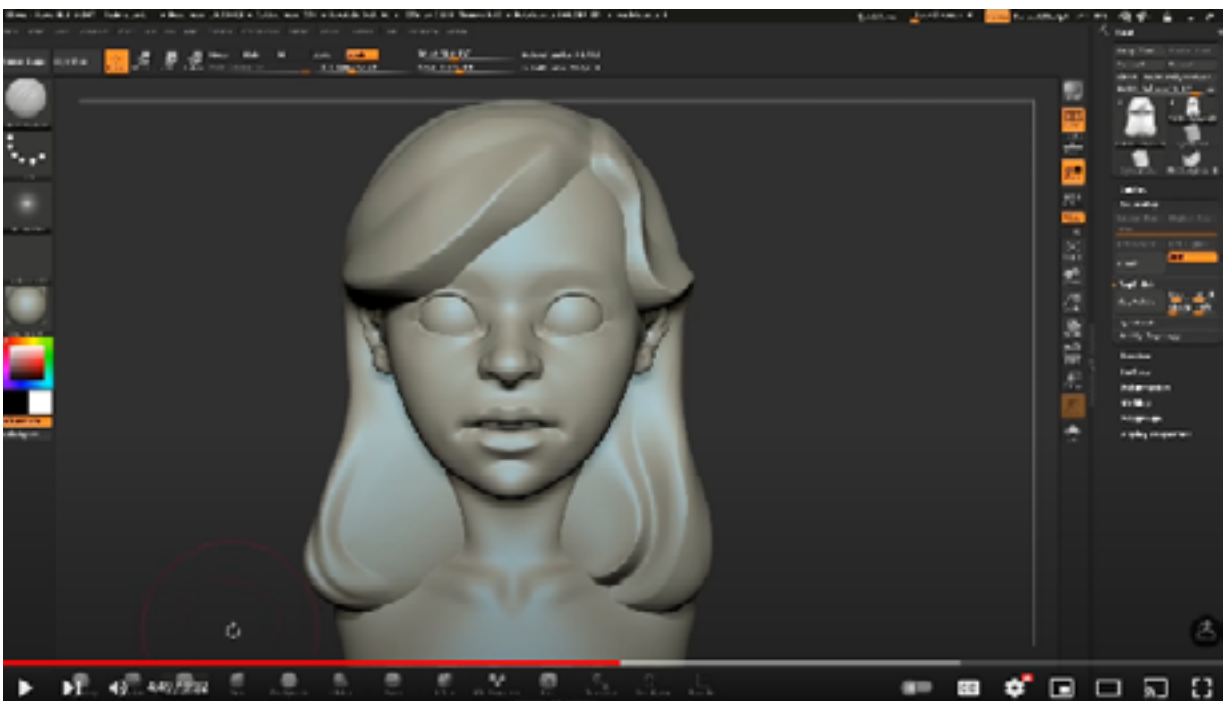
Likewise, some characters had strange doubles ups (D.V.A had four sets of identical hair)

These should only be used as a rough guide.



https://www.youtube.com/watch?v=nDudC73scSk&ab_channel=Thivolan3D

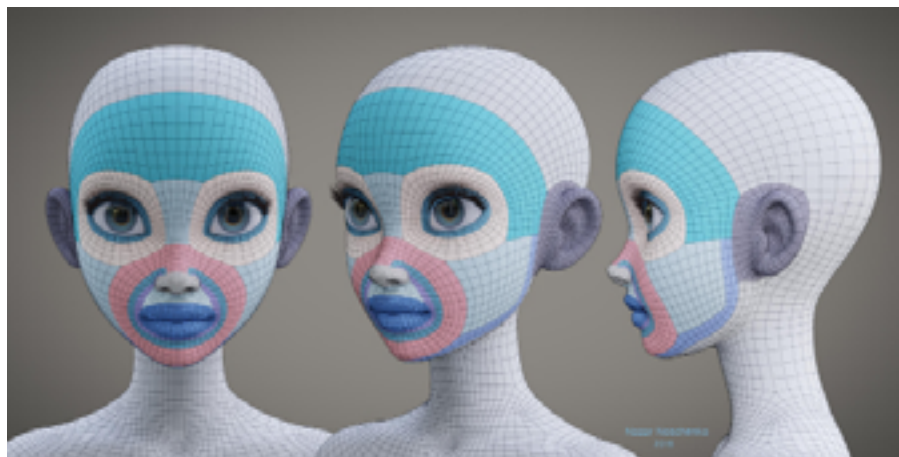
There are programs that i used such as Zbrush that i had not worked with before. So i researched videos to help me out with the creation of clothing, hair, and also the different tools that were available to me.



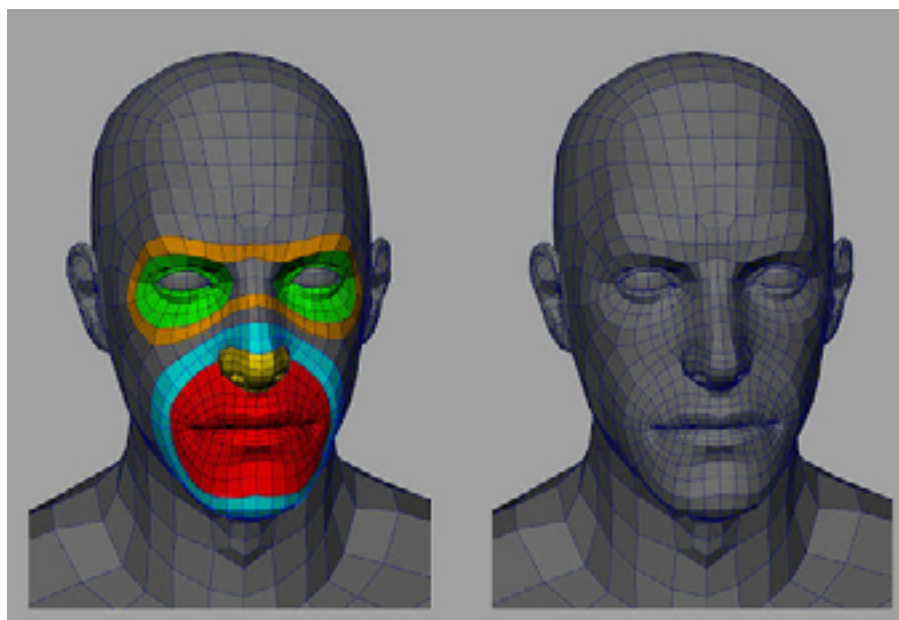
https://www.youtube.com/watch?v=wwANBzqB_Rs&ab_channel=PixologicZBrush



youtube.com/c/dannymac3d



<http://wiki.polycount.com/wiki/FaceTopology>



<http://wiki.polycount.com/wiki/FaceTopology>

I researched and found how Topology is important when it comes to rigging, animation and game performance.

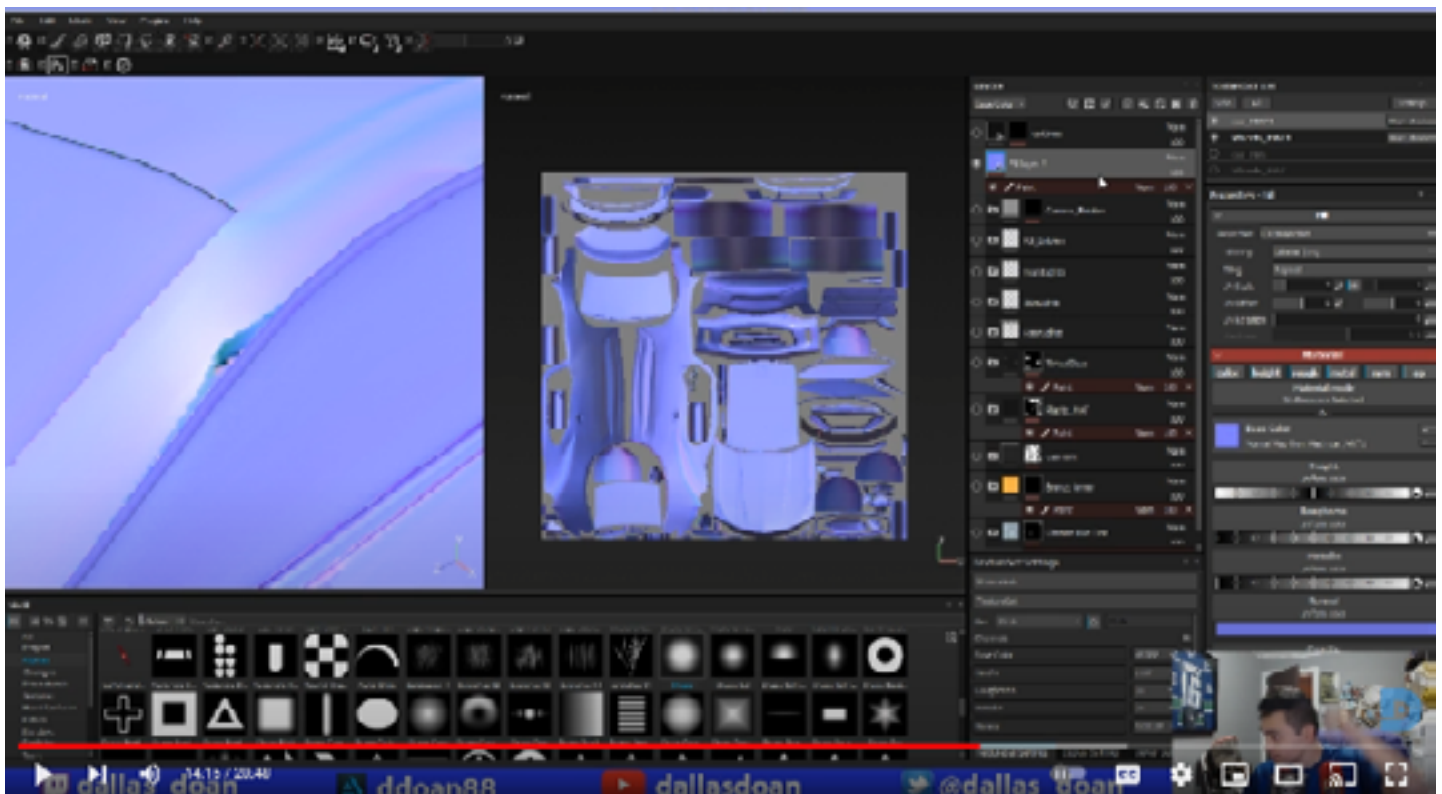
The more polygons you have the slower and harder it is for both the process of rigging and animating, but it is also heavier for the game.

It is important to have the right topology in order for your model to move properly without deforming in weird ways.

It is better to Start big and then add more details just as you would with any other project.



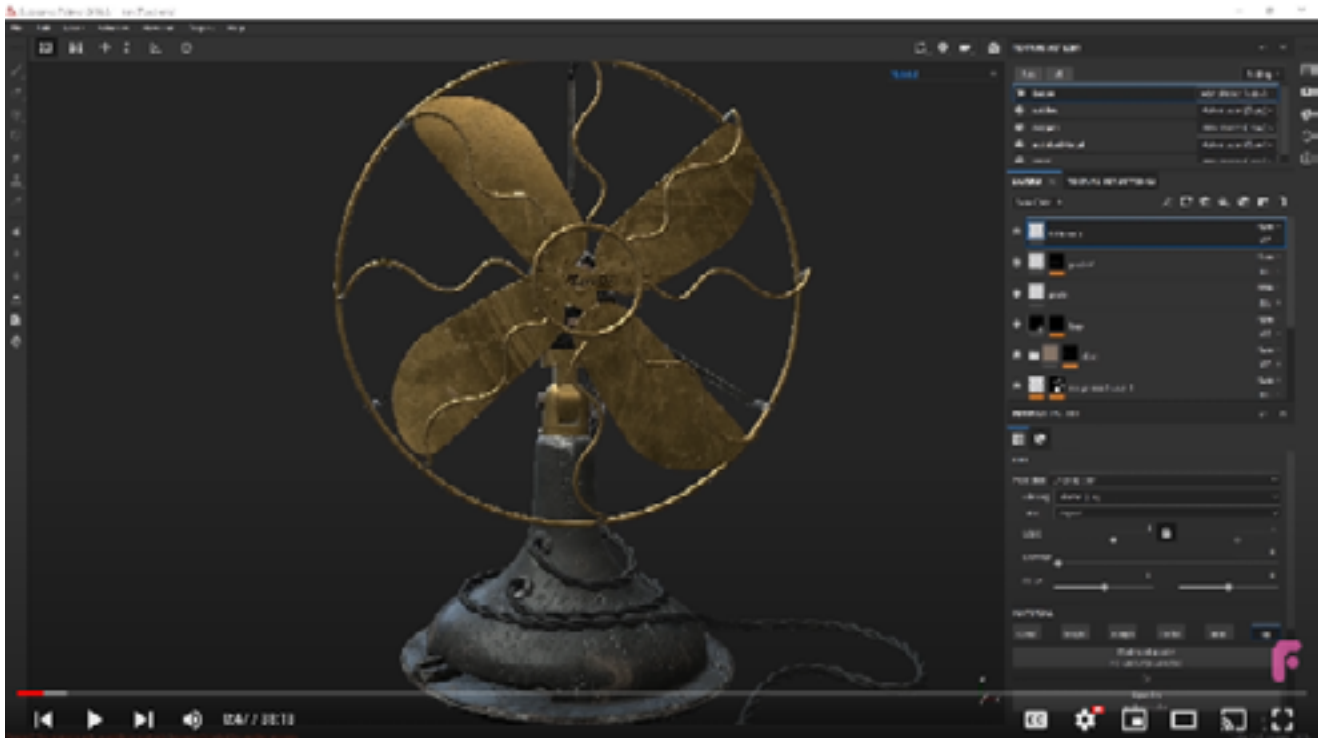
https://www.youtube.com/watch?v=Y-Ak66N0cAw&ab_channel=DannyMac3D



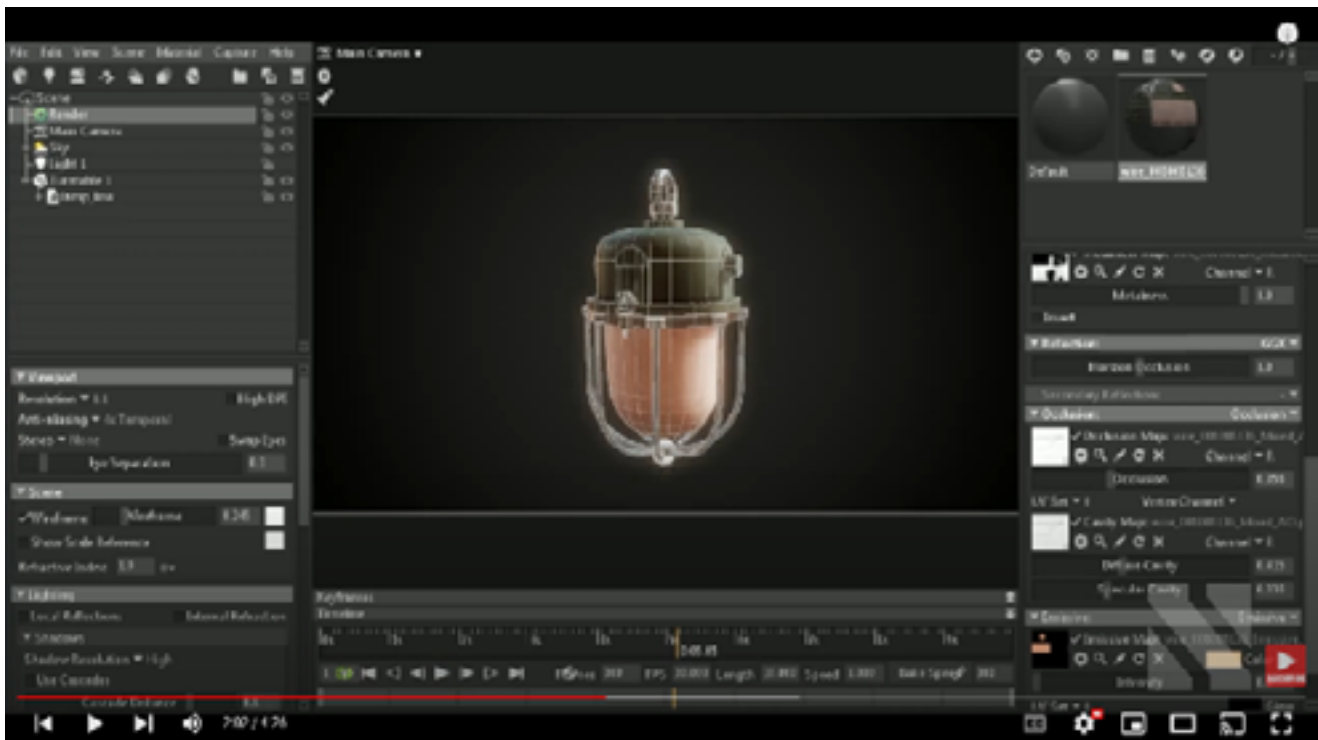
https://www.youtube.com/watch?v=WfuKxHJaApQ&ab_channel=DallasDoan

After Retopology, i had to UV and bake the high poly to the low poly character. Since i ran into some problems with the bakes, I had to research how to fix them. For most i simply went back into Maya and named the different parts so they do not bake over each other.

I wanted to understand textures and how they work ahead of time. I also had to learn how to use Substance Painter so i watched youtube videos and worked on test projects. The final step was putting everything in Marmoset and figuring out how to render things properly.



https://www.youtube.com/watch?v=ZOHNRLrd1Ak&list=PLIX8Osa90UG433tdPpOLQPajAK6uDm-B6&index=65&ab_channel=FlippedNormals



https://www.youtube.com/watch?v=VP9AwKul6ng&list=PLIX8Osa90UG433tdPpOLQPajAK6uDm-B6&index=92&ab_channel=NinaShaw-GameArt

Test Projects



Concept by Moritz Cremer

I wanted to learn how to use Z-brush so i decided to take on a project I would like (Took 9 hours to sculpt and paint). I found my concept and started my project. Whenever i felt confused and did not know what steps to take next, I would search videos on youtube on specific subjects. For example: how to make subtools or extrude parts, how to mask, how to use certain brushes, etc...

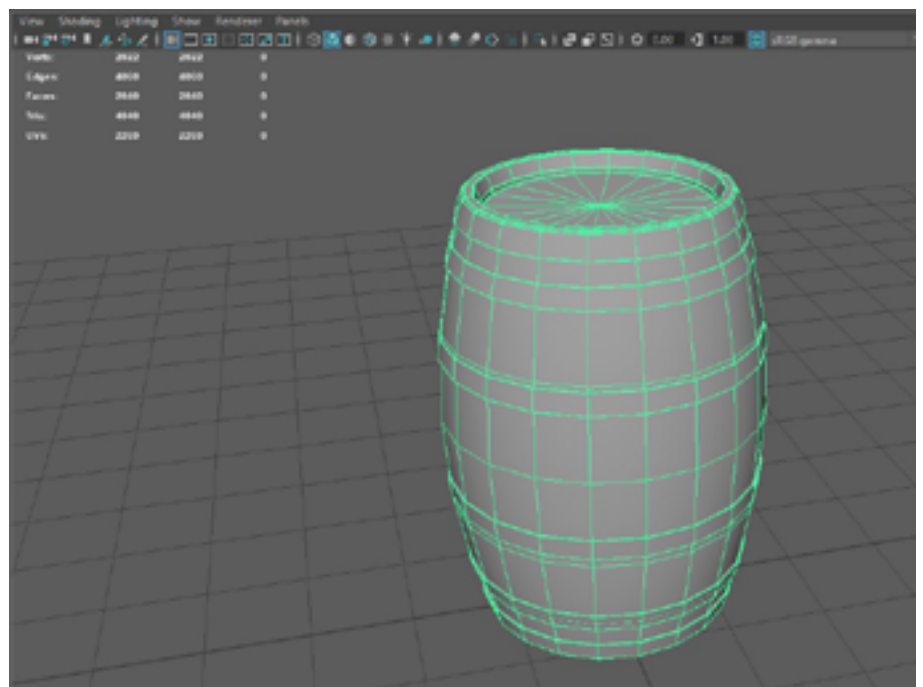
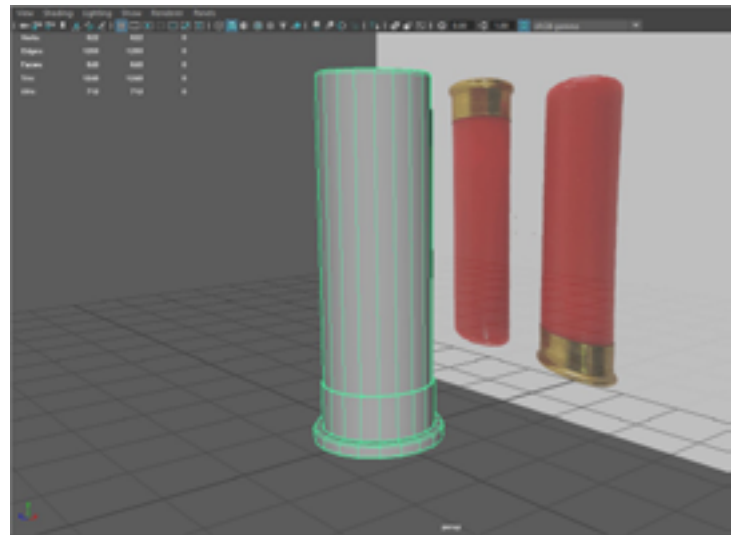
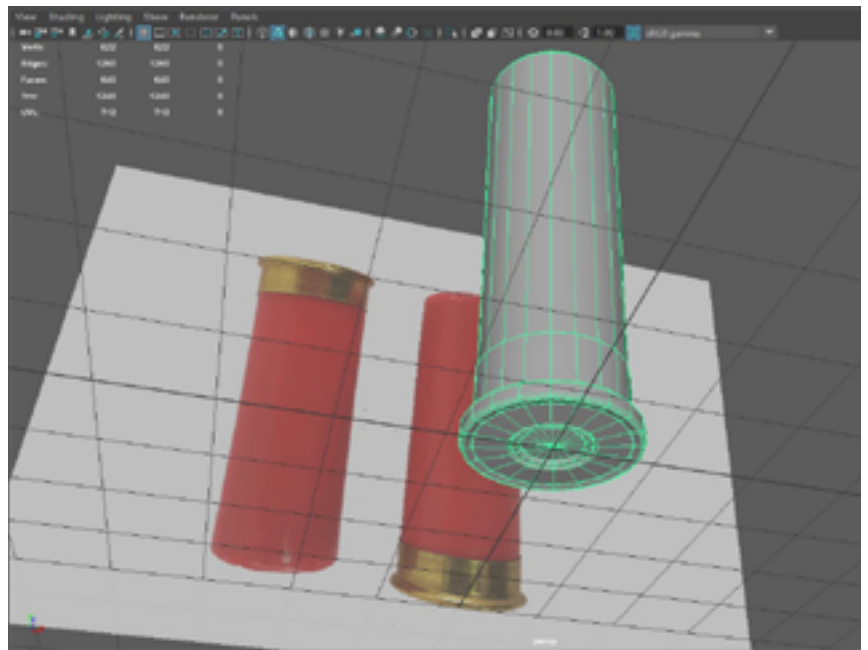


I was also able to successfully transfer the sculpt from Z-brush to Maya as an Obj file, and then used the tool separate in maya to regain the subtools i had created in Z-brush. (subtools are seperate parts of the model like the eyes, eyebrows, hair, etc...

I also decided it would be beneficial to go ahead and relearn Maya. It had been a while since I had used the software.

I practiced modeling a few objects and also created a custom panel to access the tools I need faster and easier.

For some of the steps in my projects I actually used a lesson I bought on Udemy for game characters. I will not be sharing any images from that since I am pretty sure I should not be sharing those.





This is another test i did so i can learn how to use Substance Painter. I spent more or less around 4 hours sculpting in Zbrush, retopologizing and UVing in Maya, and then transfered it into Substance Painter so i can begin painting.

I ran into some problems with the baking of the high poly into the low poly because of the file type i used to import it into Substance. At first, I used .fbx but when i changed it to a .obj file it baked fine.

Concepts/Visual Development



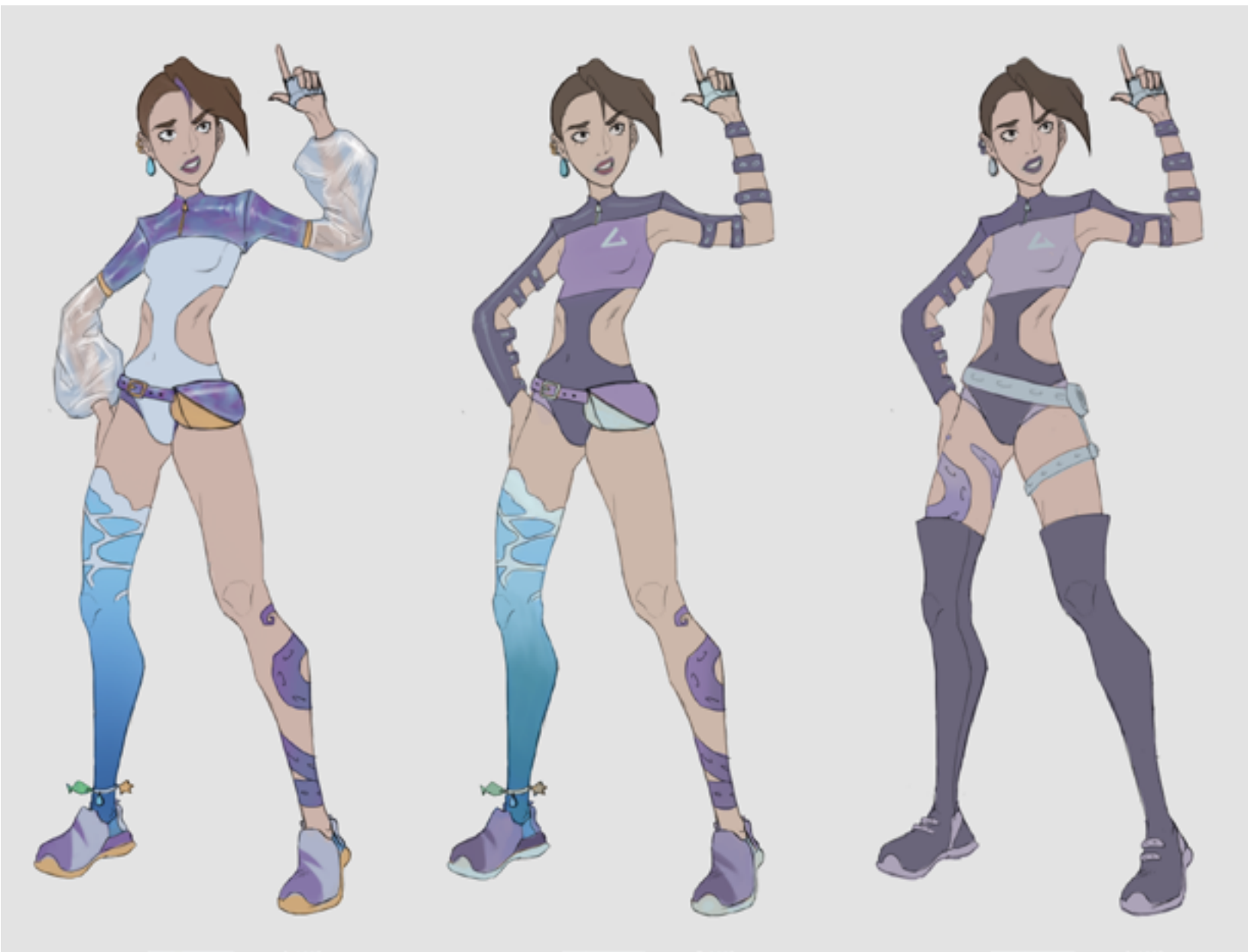


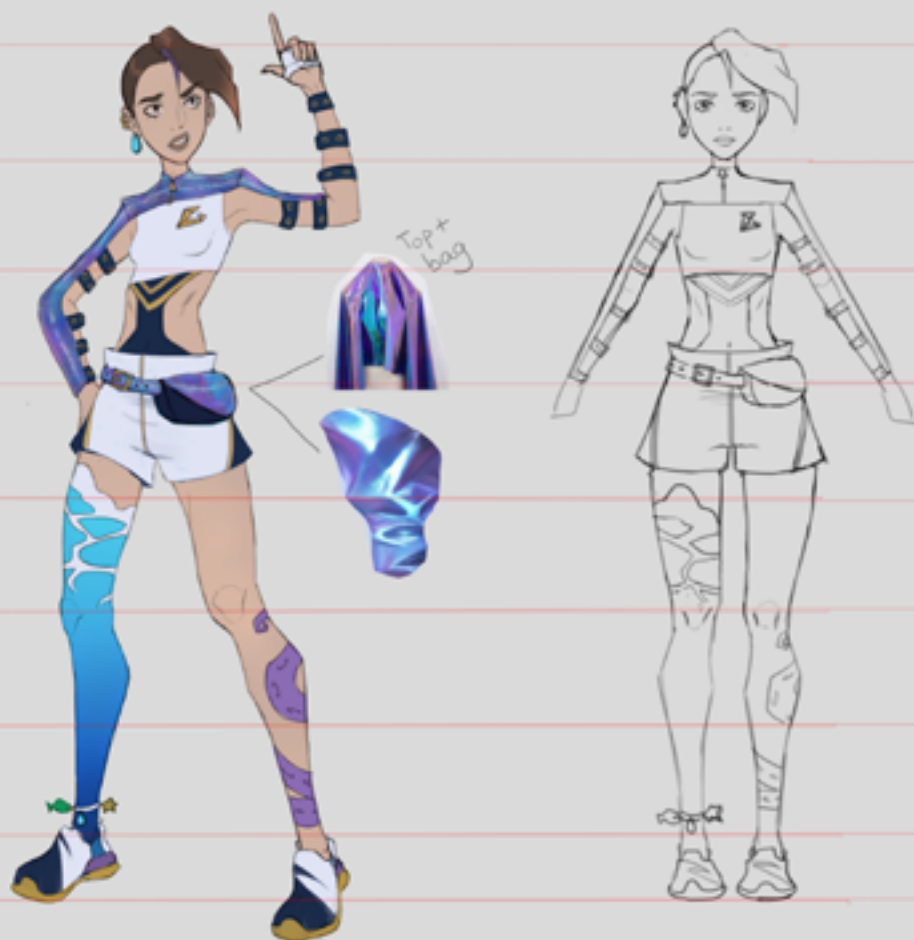
Silhouettes

VS

Design



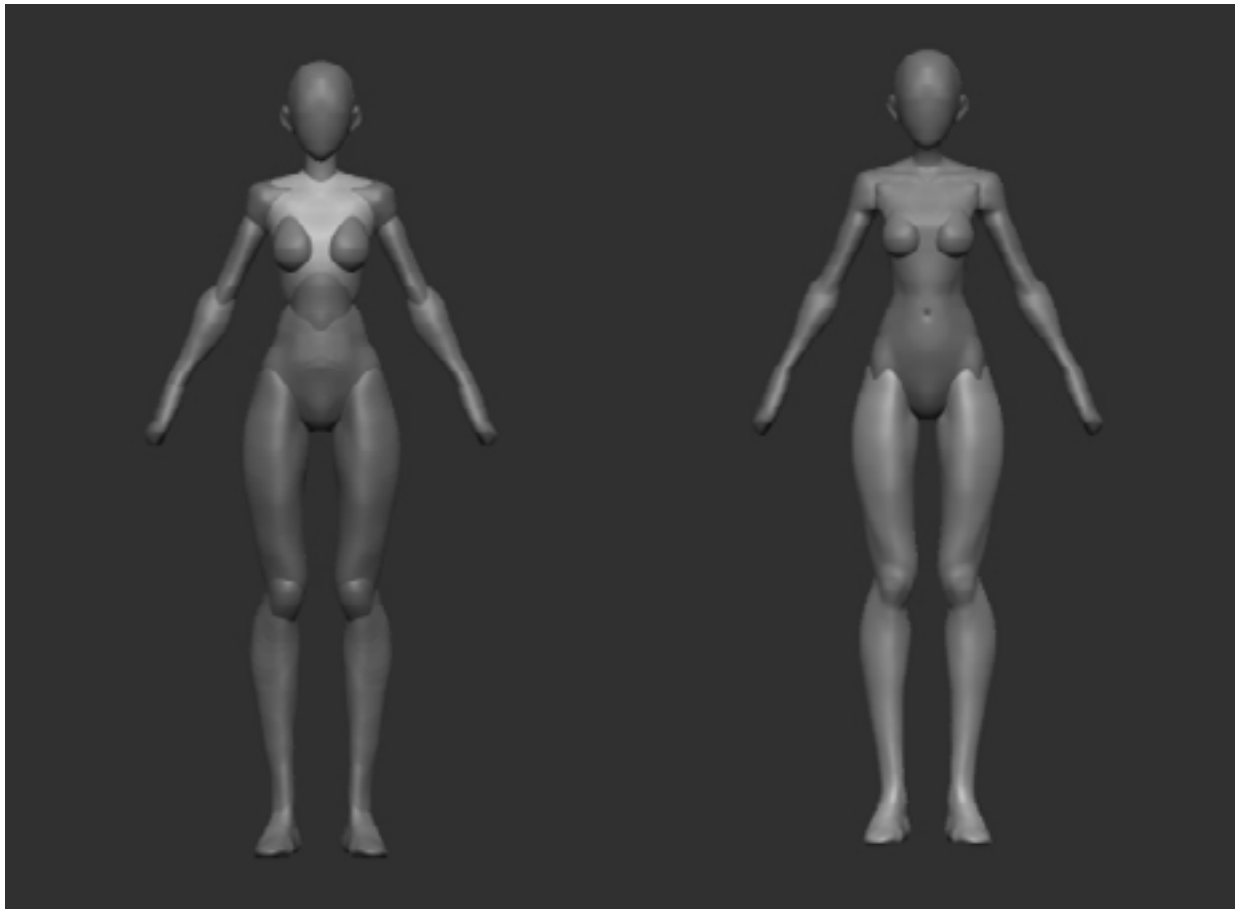


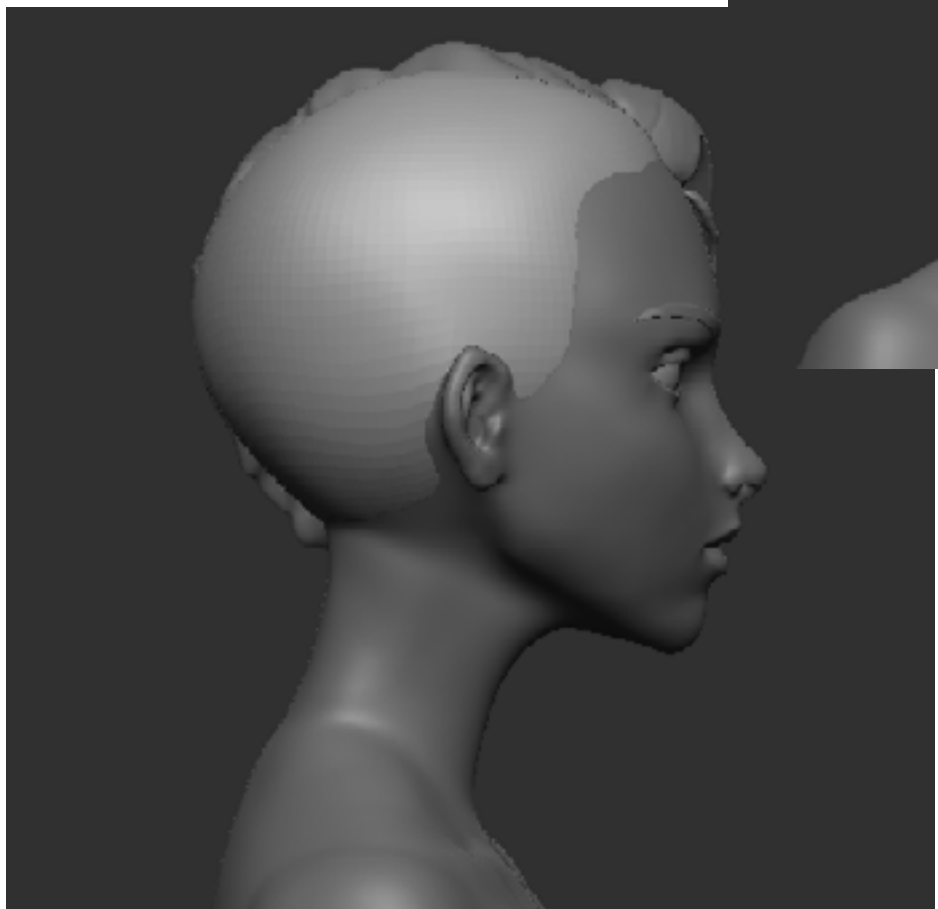


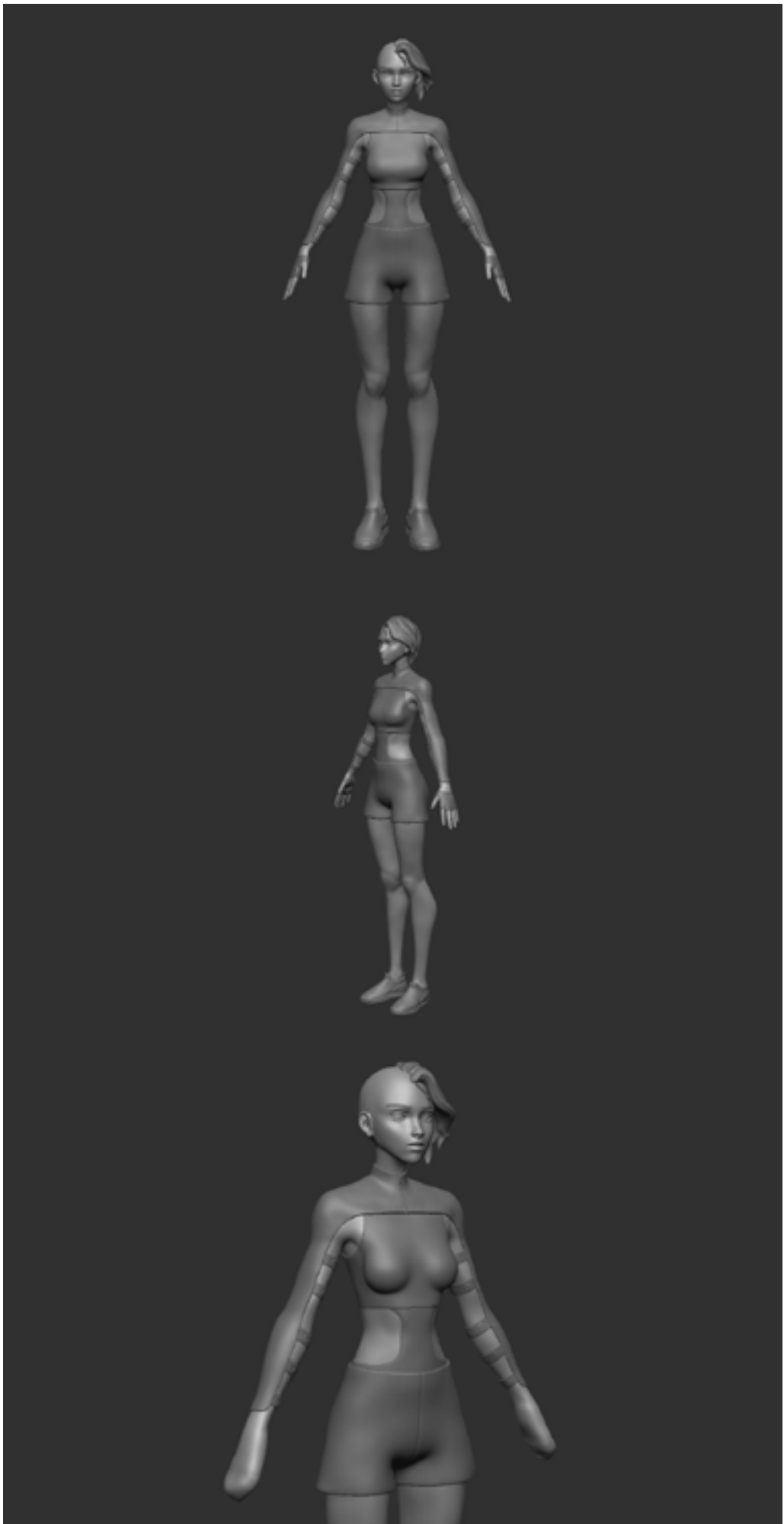


Shots

Sculpting in Zbrush

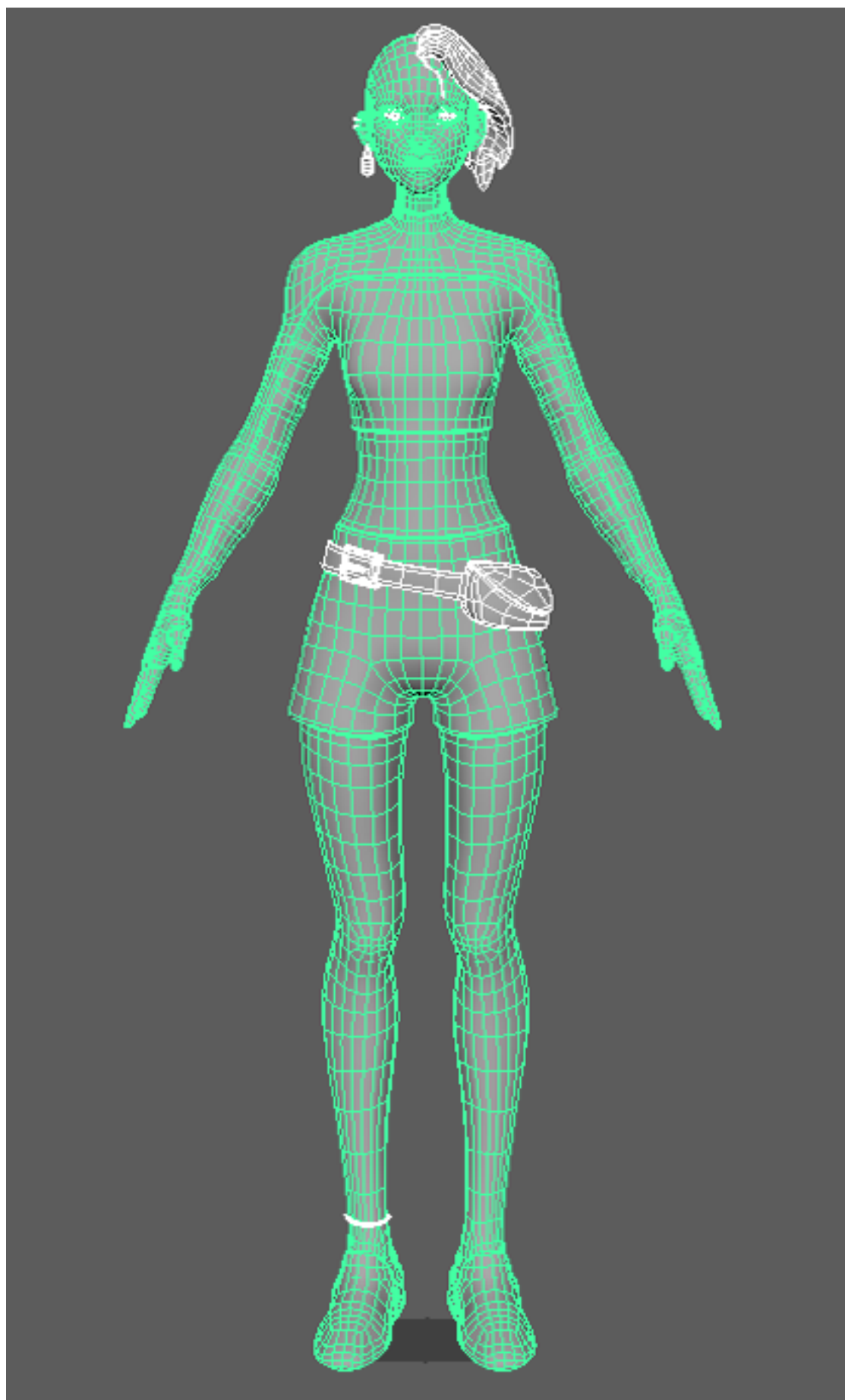


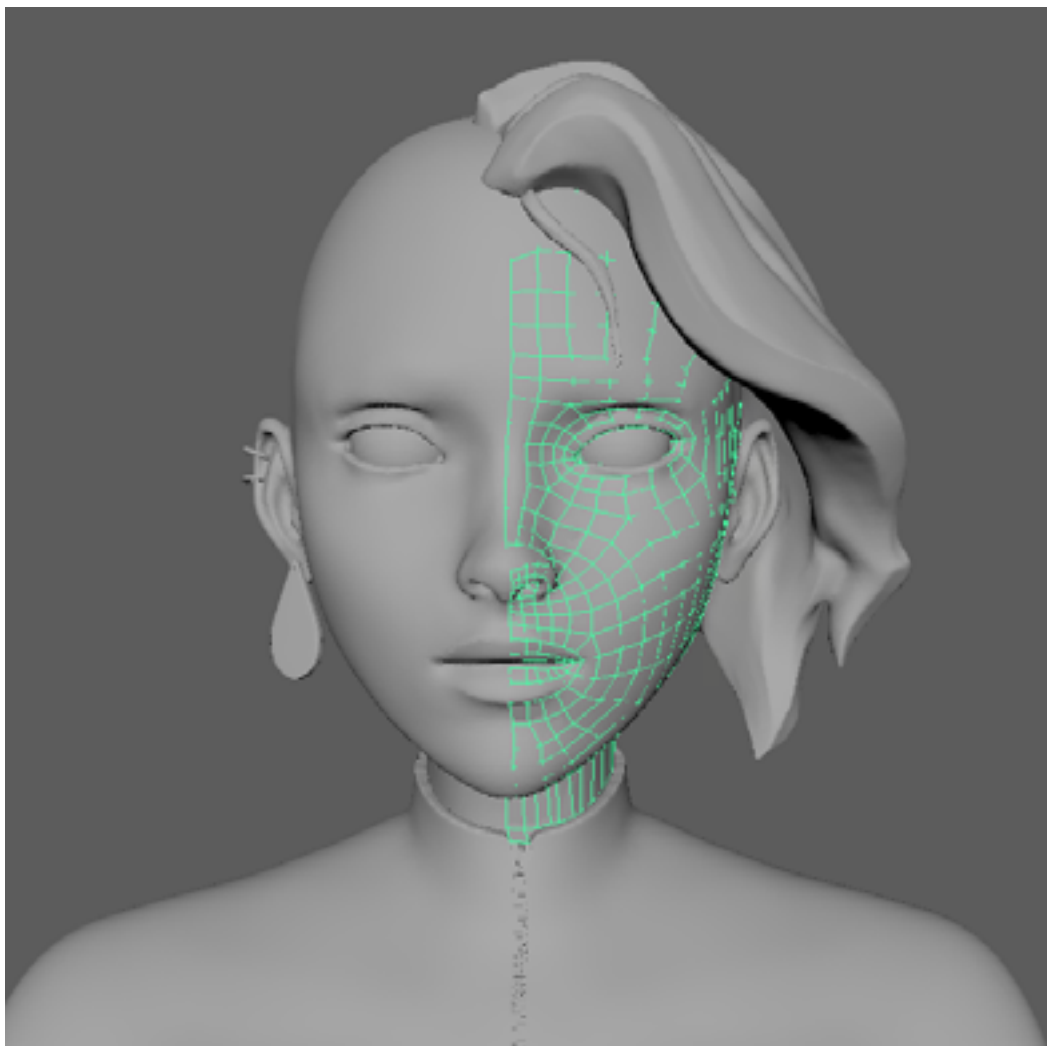


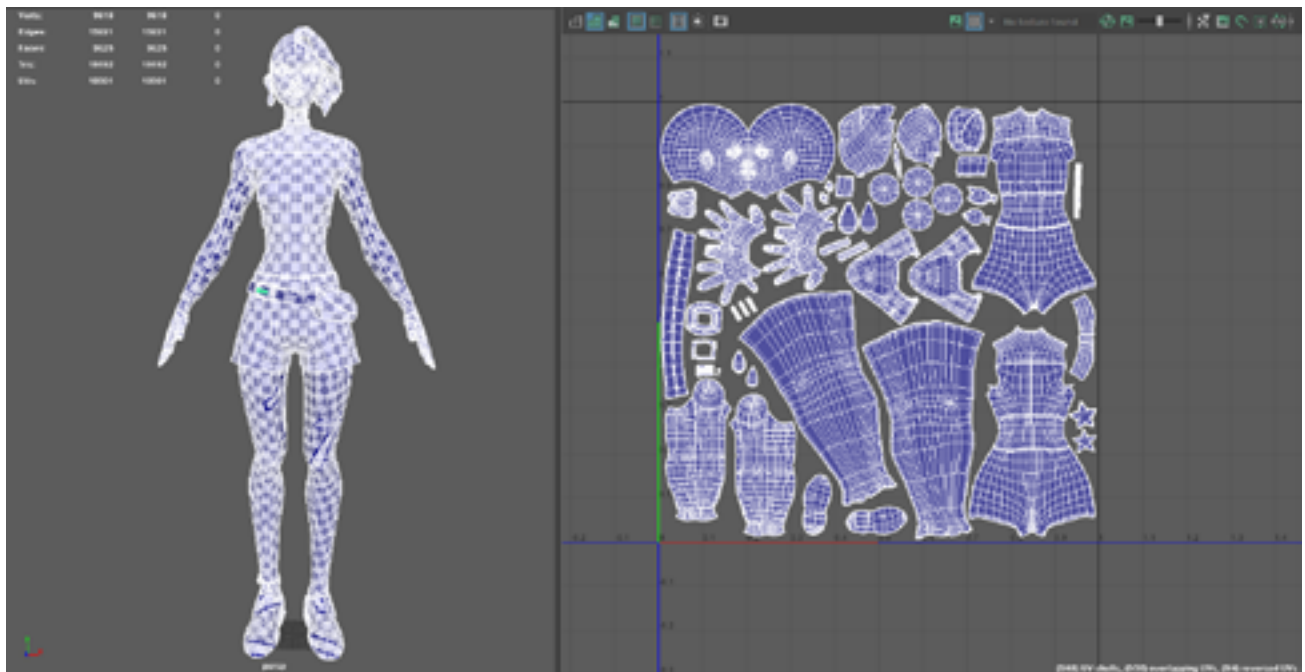
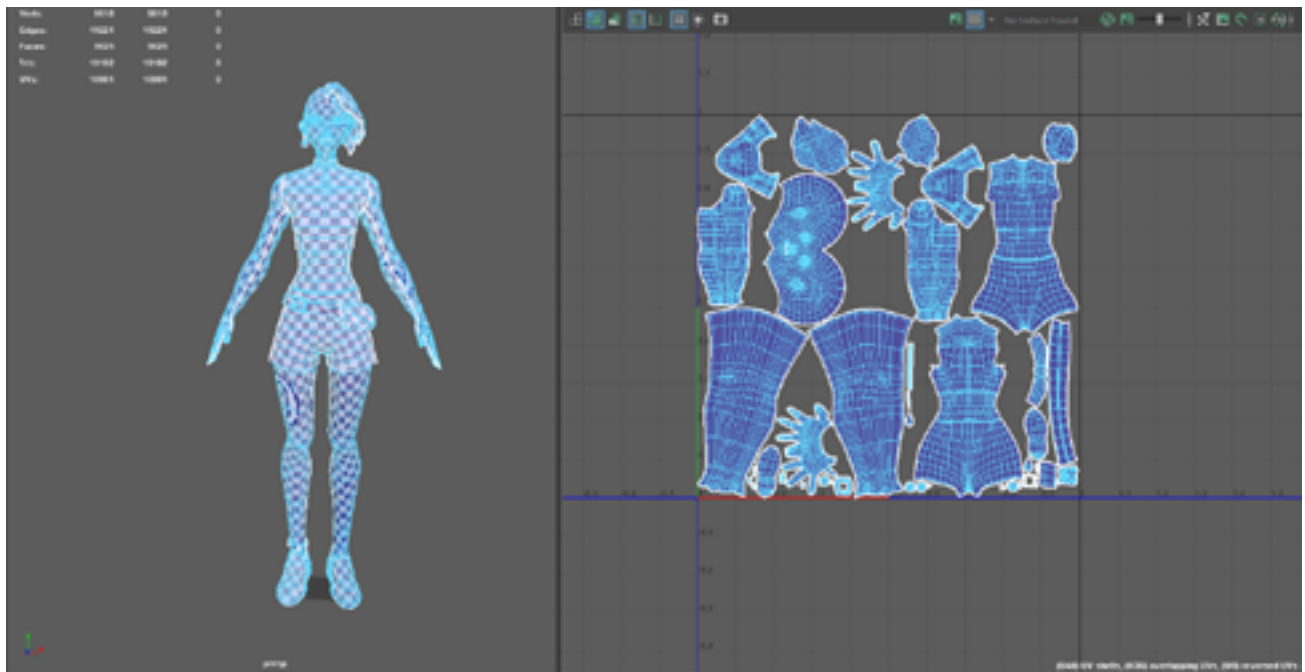


Retopology, hard-surface modeling, and UVs in Maya





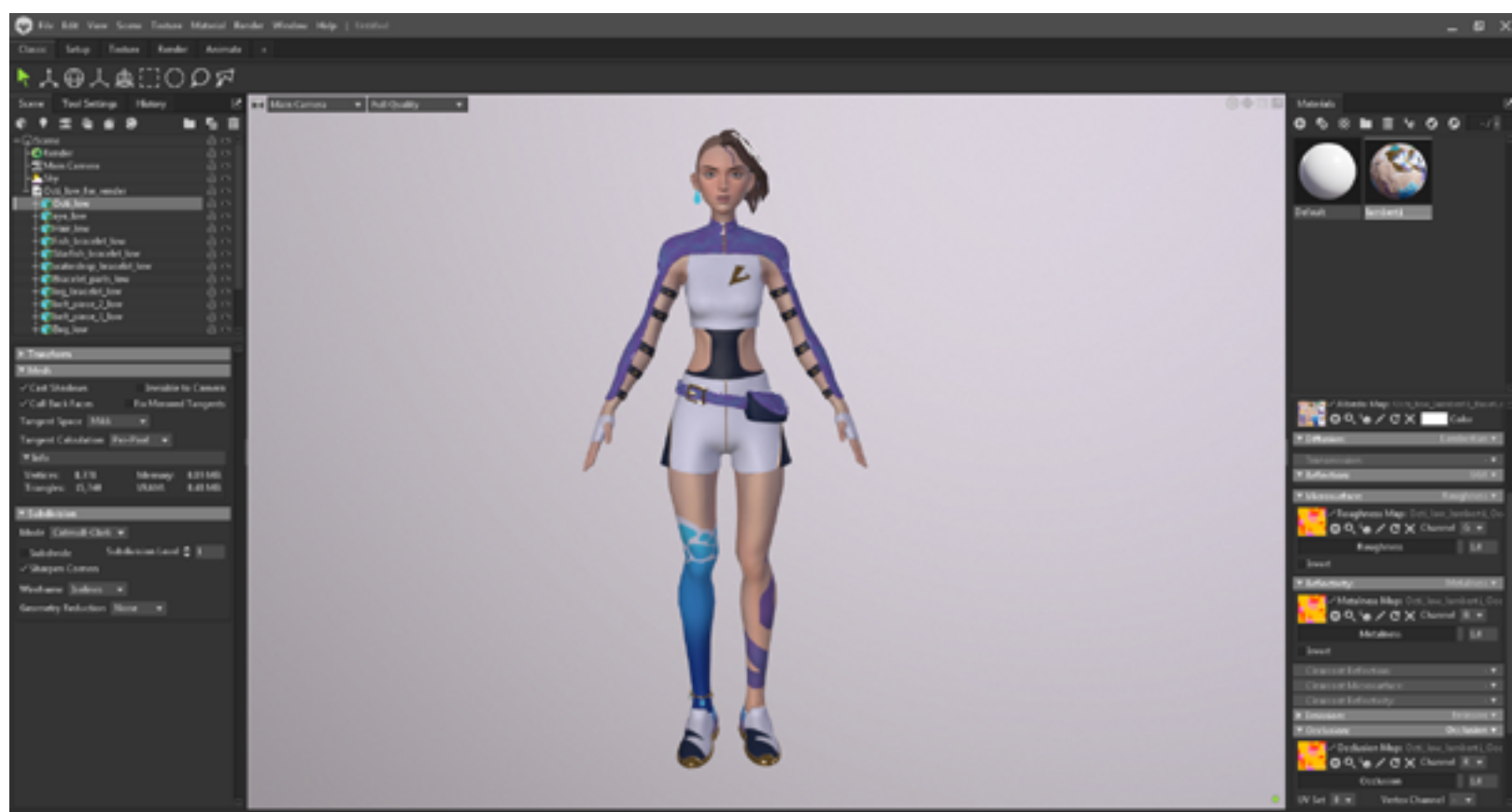




Bakes and Textures in Substance Painter



Renders in Marmoset Toolbag 4



Successes and Failures

Since this is a pretty big project, I could not avoid failures. However, they were easy to solve since i had research prior to starting the project.

When i created my very first base, it simply looked wrong because of the symmetry being turned off and the parts were already merged. So i had to do the base model a second time.

When working on the retopology, i had trouble with 2 triangles. Yes, two. So i decided to retopologize the bag that was on my character's waist as a separate object. That not only helped with the topology, but it will be more useful when it comes to rigging and animation later on.

The most annoying mistake was with the bakes. I thought it would be the easiest part but it turns out it wasn't. My bakes overlapped so I had to go back into Maya and create a copy of my file that would only be used for the bakes and not for the actual mesh. I had to name each individual piece for both the low poly and high poly to make sure they had the appropriate naming. That was so that they do not bake into each other and instead bake as individual parts. Some of the parts that I could not fix through the naming convention, I exported the normal texture and worked on it in photoshop. I had to go back and forth between the programs to figure out if the bakes looked okay.

Budget

For this project I used 6 different software. Zbrush, Maya, Substance Painter, Photoshop, Marmoset Toolbag 4, and After Effects.

Out of all the software, I purchased 3 of them since the rest were given by the university for us to use during the semester. Unless I was really sure I wanted to work with 3D more in the future, I would not have spent the money on the softwares since they are pretty pricey.

I did try the free trial of the softwares before I used them to make sure they are what i wanted. I spent \$895 on Zbrush, and \$299 on Marmoset Toolbag. The licenses are a one-time purchase and can be upgraded up to one year. The 2 courses i bought on Udemy costed less than \$30 combined.

Finished Production Schedule

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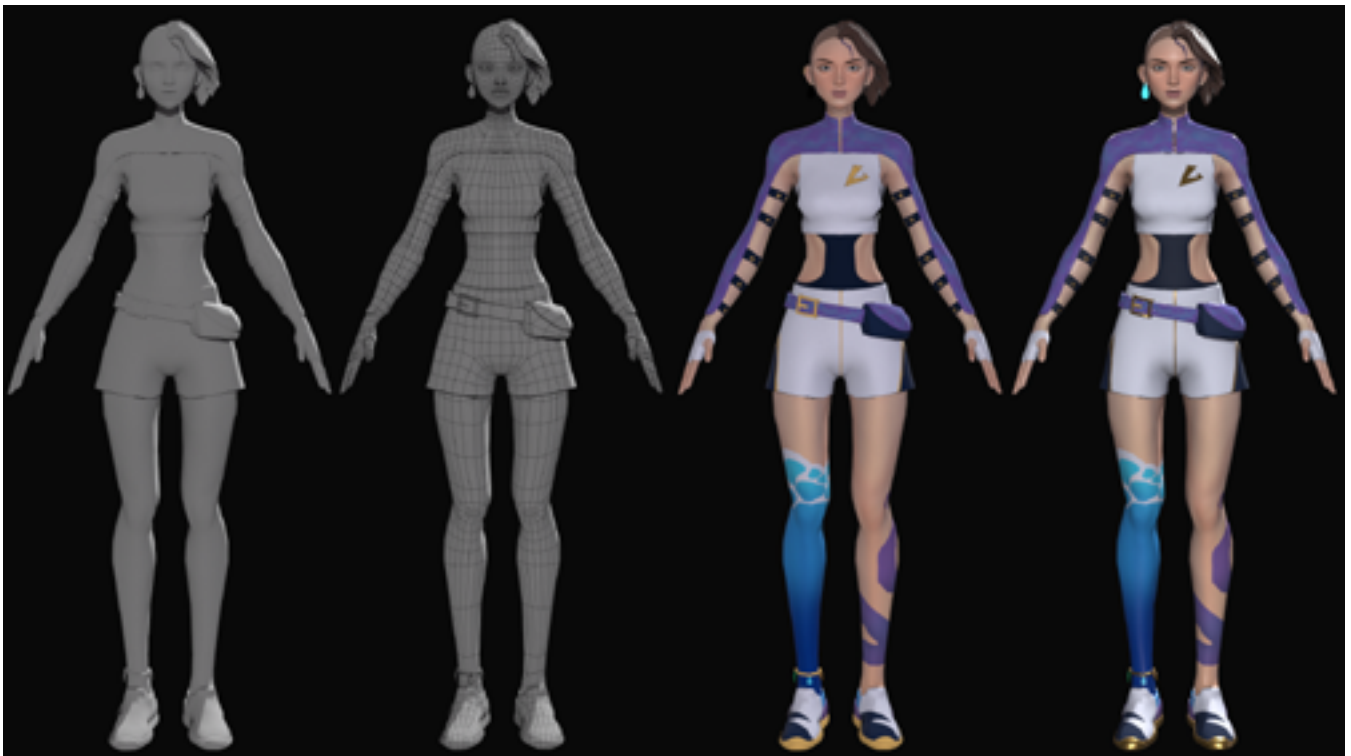
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Video Presentation of Final Project

Vimeo:

<https://vimeo.com/703136888>

Final Images







Advice to Former Self and Students

Work on something that you truly want to work on, but also experiment and get out of your comfort zone. While in school, try to make time for more personal projects and try out new things. Talk to your professors and let them know what your goals are. They are the best sources you have while in school.

Trials I had to Overcome

Working on a big project that has a lot of processes was challenging. A lot of things I had to learn on my own or use the internet. Apart from the project, I had to balance my personal and school life. There were times that I could not get things done, so I had to make time or stay up to work on the project.

Things I am Most Proud of

I did not know much about 3D art before this project and I have come a long way and understand most of the processes behind creating video games assets such as characters. I really love how the character turned out.

Reflection of Learning Goals

So far I accomplished everything I set out to do and more. I was able to learn a lot about 3D which will help me not only in my future career, but also with my future goals of designing my own video game.

Post-Thesis Professional Goals

I would like to work on video games and join different companies. My goal is to work at riot games since my favorite game is League of Legends. I would also like to work with artists that I admire. After I gain some experience I would like to create my own video game.