



Kevin H Gordon

Process Book

Project Title : Kendra Rising

Software

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The Project



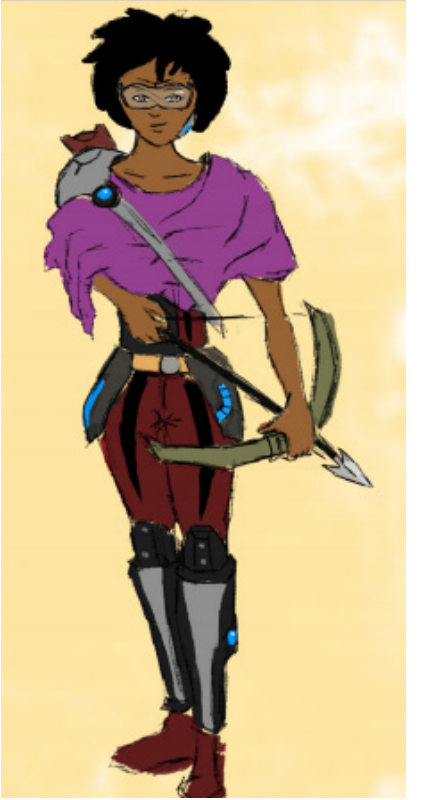
What is Kendra Rising?

This was the final project for Professor Parrish's Digital Sculpting for Games class. Out of all of the projects I've created, this one was by far the most personal one for me to produce. Growing up I've always noticed a lack of representation in the media for people who not only look like me, but also have similar abilities such as mine. It was only recently that I began to see people of African descent be portrayed in digital media. People who are hard of hearing. however, I solemn see in mainstream media. I'd been designing a character such as this for a long time, so this was the perfect opportunity to fully develop it into a 3D character. My goals for this project were simple

- Design a strong character of African descent
- Have the character design reflect a person who's is Hard of Hearing

As I had prior experience with developing characters in my Bachelor's program, I was eager to see how far I could push this character. In this book, I will break down the journey of this project, and show what went into it at each stage.

Design Plan Sketches



Design Process

Mapping the Elements

After combing through several old design iterations, I settled on the final design seen to the right. Since I knew the direction this design piece would go in, I began to identify the different components that were required to make this piece come to life. Mapping this out allowed me to tailor my reference to more accurately reflect the final output of this design.

In choosing these design elements, I decided to focus only on elements that would fit within her world. That being elements that would work in more action oriented gameplay elements.



Reference

Crossbow

The first aspect of the design I decided to focus on was that of the crossbow. While I didn't design this character to be one heavily focused on stealth, I did want her to focus more on long range movements as compared to short range. Reason for this is twofold. For starters, the AR glasses that she wears gives her a HUD that allows her to easily find enemies. Additionally given this character has to rely on assisted devices in order to hear the world, being a close range action will often put her at a disadvantage in the event the device loses power. For those reasons, I chose to give the character a long range weapon to use in combat.

As for the specifics of the crossbow, I wanted it to be more of a compound bow. These bows are great for striking at great distances. Some designs even have space where archers can place arrowheads inside.



Reference

Archer Glove

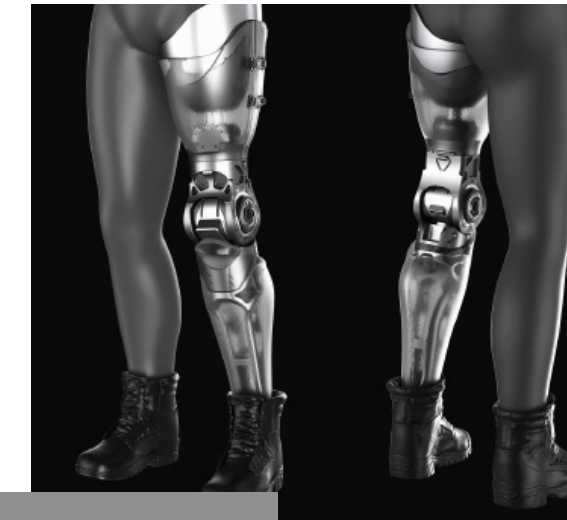
The next big of reference that was tackle is that of the archer glove. From researching archer gloves, I discovered that these gloves are meant to protect the skin during weapon fire. After learning more about the purpose of these gloves, I ended up adding this as a major design element in this project.



Reference

Prosthetic

As a person with a fascination for technology that's also hard of hearing, I've always had a soft spot for prosthetics on characters. In developing the prosthetic for this character, I wanted to ensure that the design looked nice, while also having a practical footing in the real world. To accomplish this I looked up designs of various real life prosthetic products and concepts. Here's some of the reference I found for it.



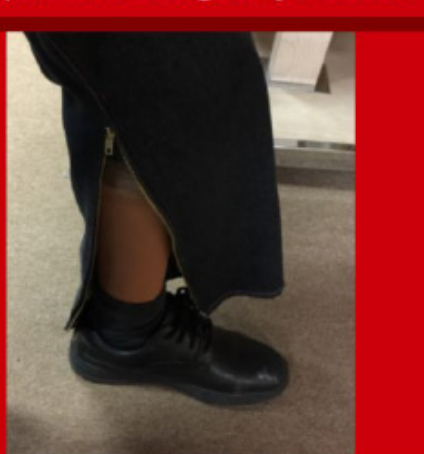
Reference

Clothing

As for the clothing on this character, I searched online for various clothing apparel that I felt would work. Though most of the clothing choices remained the same throughout the development process, the one aspect that did change was the jeans. The original concept had jeans that zipped up from the bottom. That was later changed to jeans that tear away. More on this will be revealed later in the process book.



Zipper Is Strategically Placed



Reference

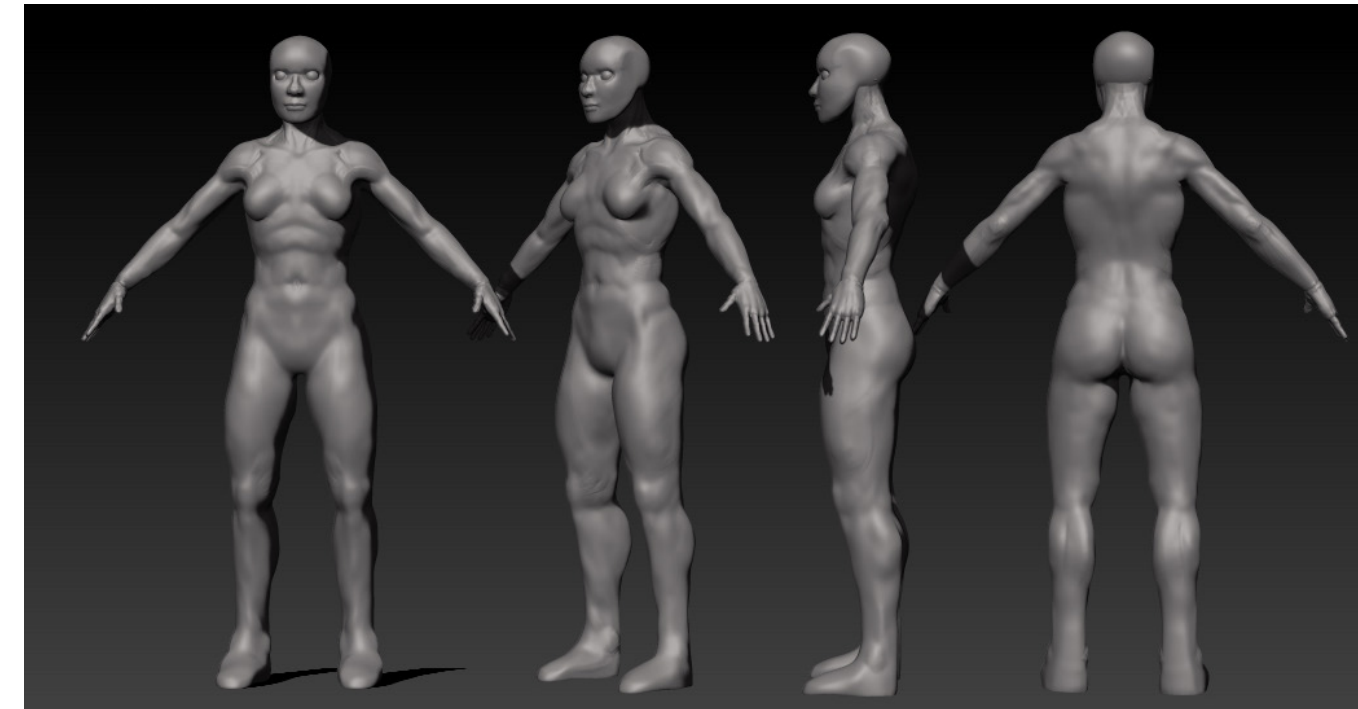
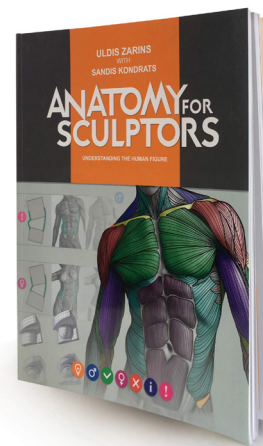
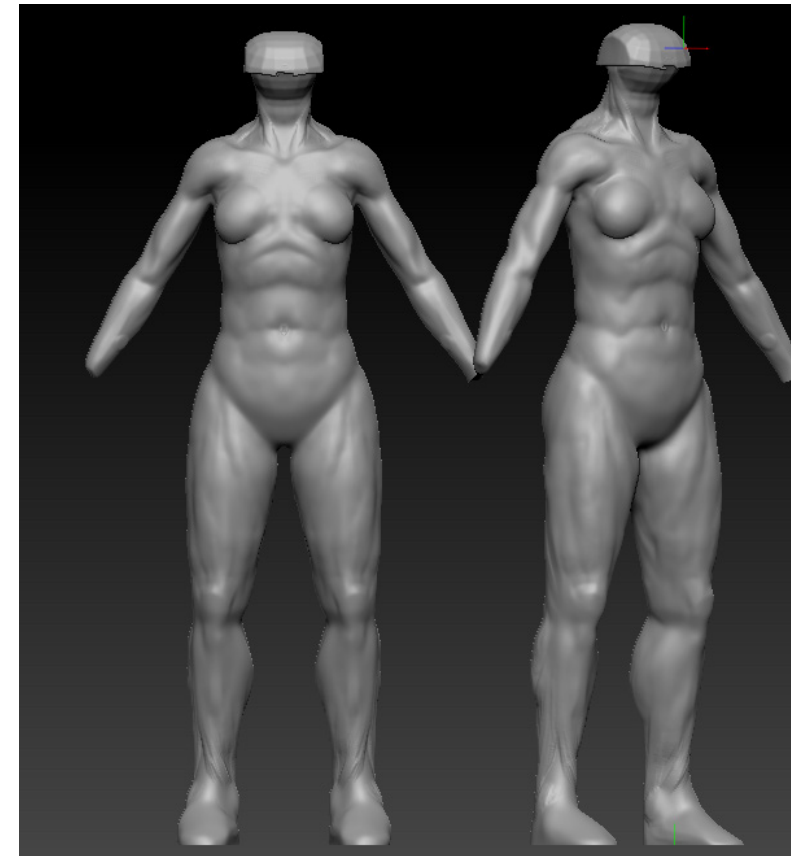
Cochlear Implant

A component of major importance for me in this project was the inclusion of cochlear implants for this character. I drew my design inspiration from old hearing aids I've worn as well as real-world instances of cochlear implants.



Humble Beginnings

Whenever I begin any 3D character sculpt, I first start by focusing on the major muscle groups of the character. I've found that this workflow leads to a more accurate final body design in the end. Through the process, I utilized several anatomy books, including Anatomy for 3D Artist by Chris Legaspi, in order to get as close as possible to the human body figure. Accurate body proportions makes forming and fitting clothes a much easier process, so getting this right was vital. Since I knew the feet would ultimately be covered by shoes, I chose to not define that region.



Final output of the base character model

Creating the Hair

Road to Midterms Clothing Block out

With the body finished, it was time to move onto adding accessories and clothing to this character. I achieved this result by masking off sections of the body, and using both the [extract] and [edge loop] tool to get the basic shape. I followed and repeating this process until I got to the base you see here.



One of the best discoveries I made when designing this character was a more streamlined to create hair on characters. See when I was originally designing the hair using the fibermesh feature in zbrush, I found that it wasn't quite giving me the effect I wanted. After working on the styling the hair for a while, I had the epiphany of just dynameshing the hair altogether. This process yield great results, and thus I kept that style. More process images with the hair featured.



Original fibermesh hair



Hair after dynameshing. Added on the wrist guard accessory



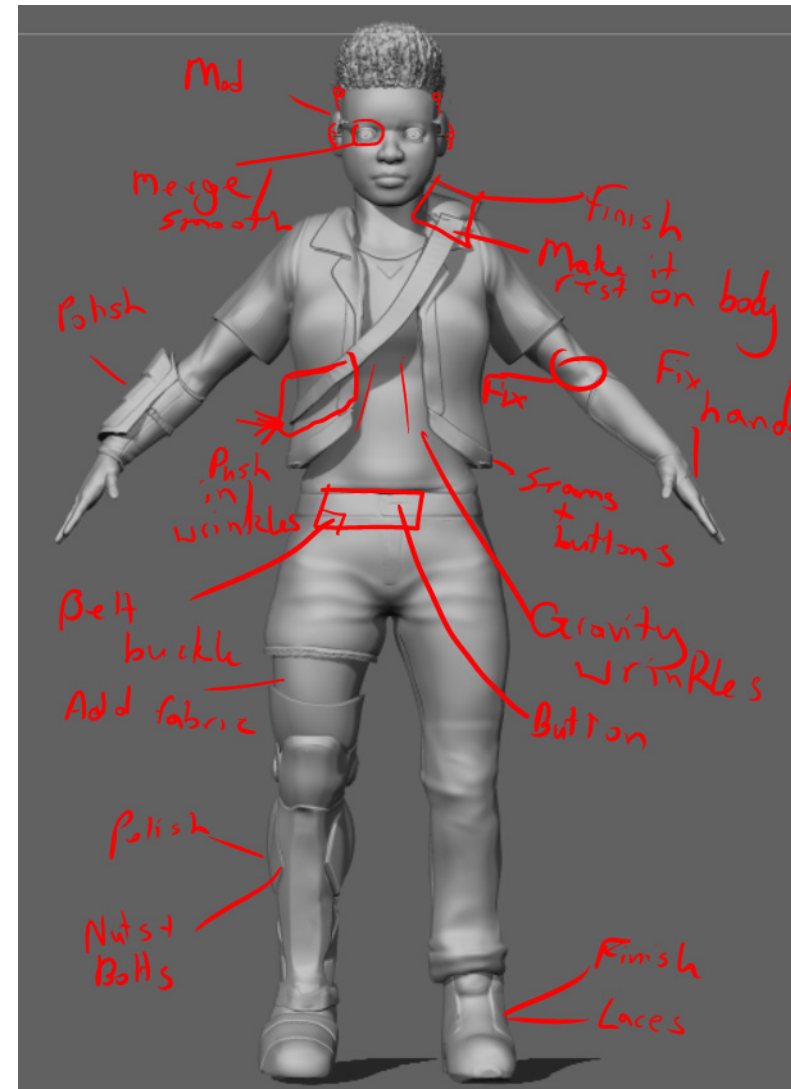
After getting the majority of the assets to a stable place. I decided to refocus on the pants. Started from scratch so I could add wrinkles to the jeans.



Around the time I was re-designing the pants I noticed a glaring design flaw. Though the idea of tearaway pants is great in theory, it would be cumbersome to move in practice. I elected to remove part of the jeans to fix this issue.

Identifying Inconsistencies

After having all of the major project components mapped out, I decided to take a critical look at my design thus far. From that glance, I noticed several issues that needed to be addressed with my design before the midterm deadline. After identifying the most egregious errors in the piece, I processed to flesh out the design until I reached my midterm update. The next page features after shots of this process.



At this stage there's still more polishing to do overall, but I did a fair job at addressing most of the critical errors from the previous iteration.



Character Posing

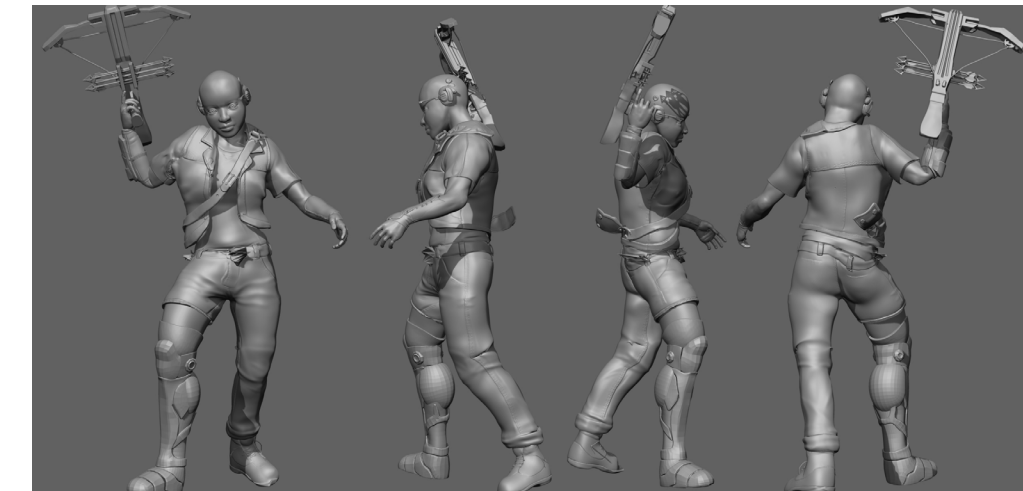
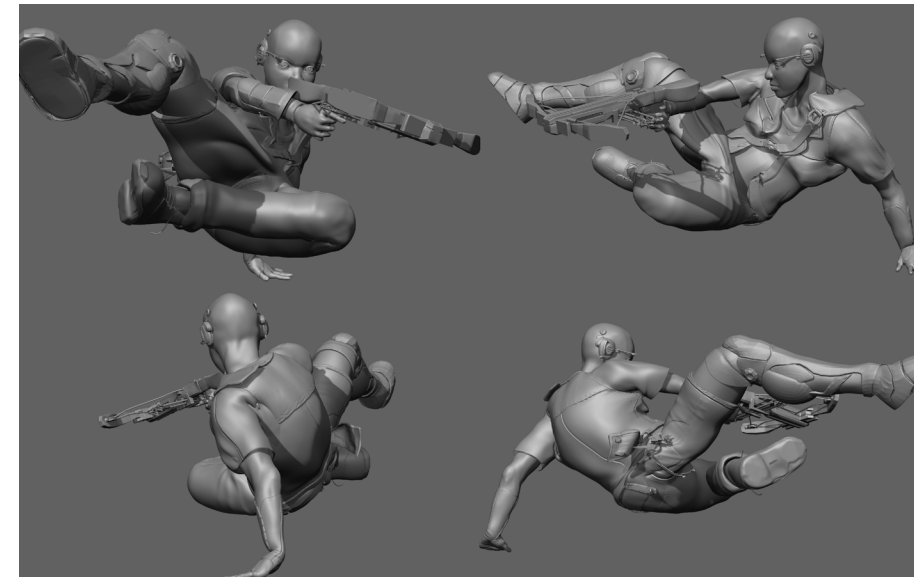
Creating the Pose

After working on refining various parts of the design for a while, I was nearly finished with the t-posed model. As per the project guidelines, the next step in the process was creating a dynamic pose for the character. As I knew this character was to be part of an action/adventure story I wanted the pose be a reflection the world she lives in. The initial process for posing this character involved bring a low-res mesh into mixamo for initial posing. Once I found a good starting point, I brought the model into Maya/Zbrush to exaggerate the pose further. In the end, there were two poses that I felt were sufficiently good enough to pursue. Silhouettes of the two poses is featured to the right.



Selecting Final Pose

Though I deliberated on the final pose for a while after critical analysis, and input from peers, I chose the bottom left design as the final pose. This pose was chosen as it was the most dynamic and interesting of the two options.

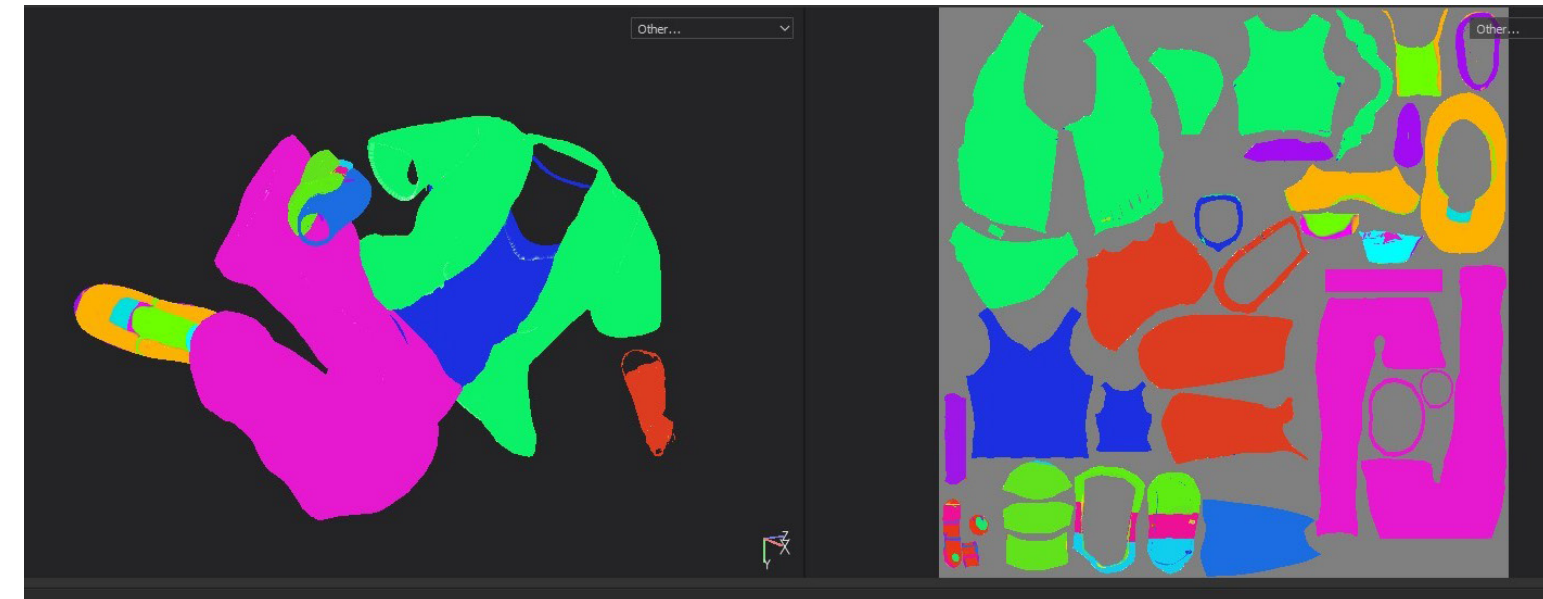
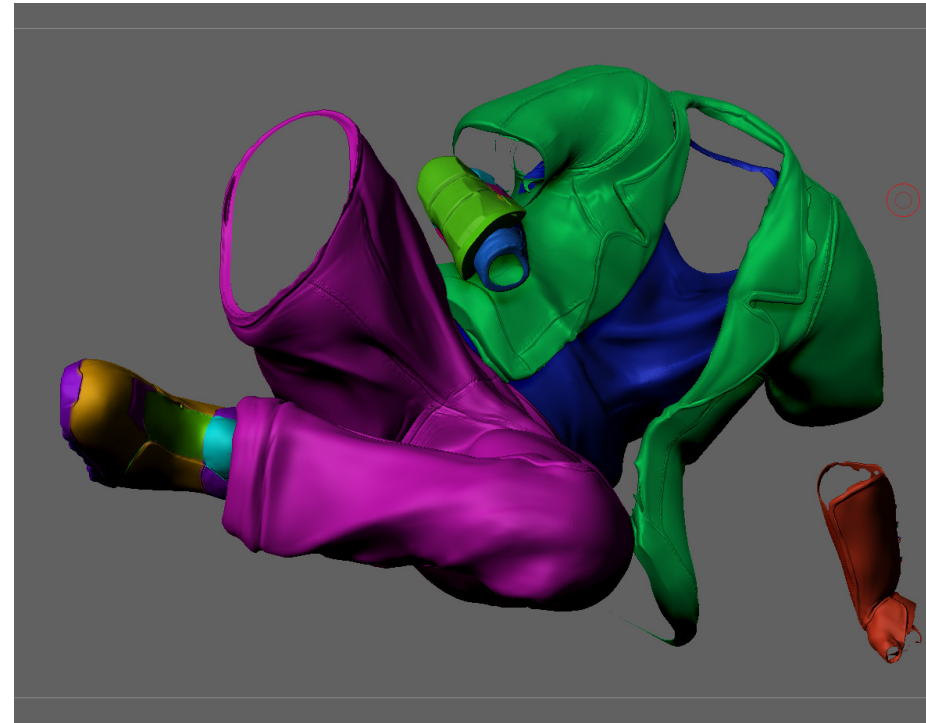


Home Stretch - ID Map and Texturing

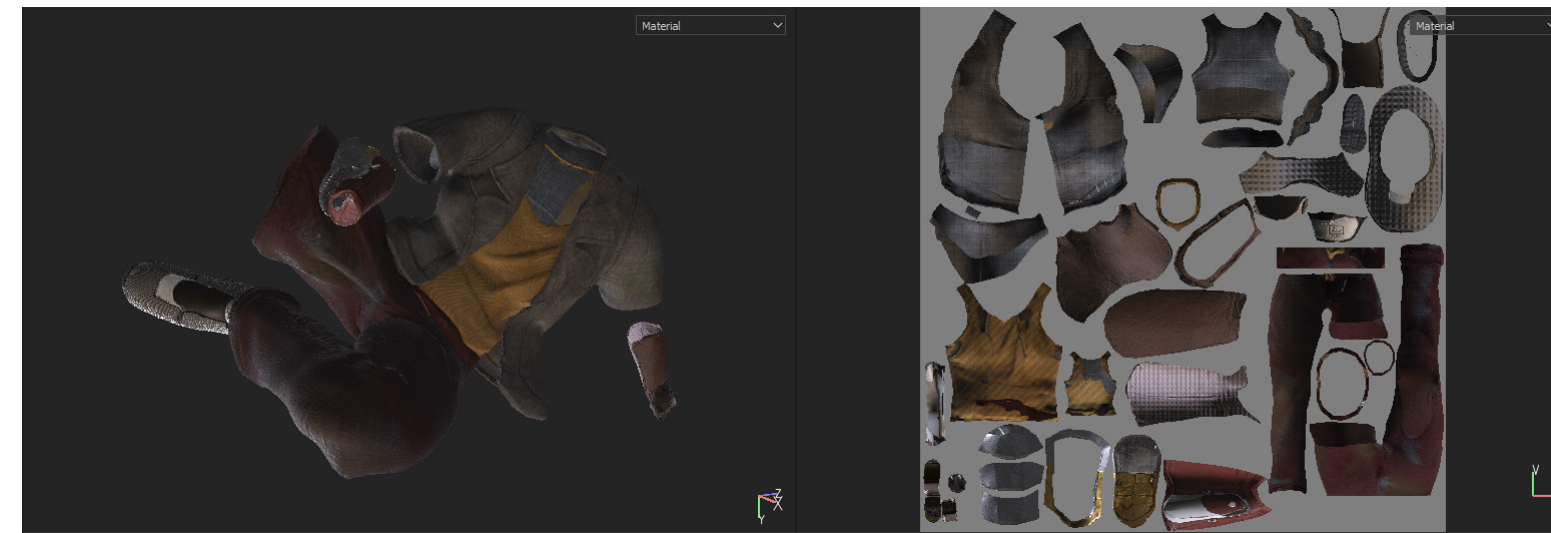
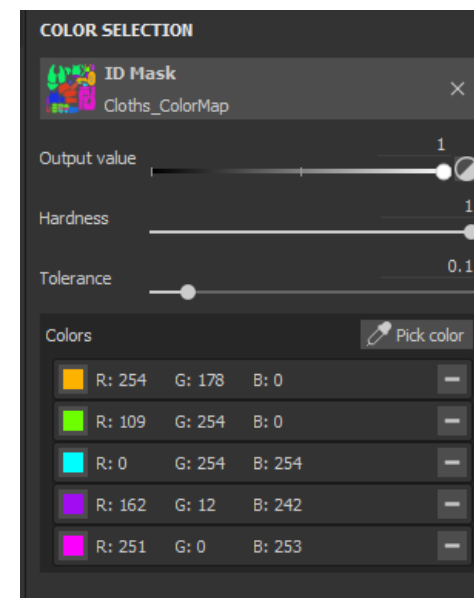
Home Stretch ID Map and Texturing

As development was wrapping up, I shifted my attention to the texturing phase of the project. While I could have simply textured directly onto the model using zbrush, I elected to approach this as a formal game asset. For this purpose, went through the process of preparing this model to be implemented directly into a game engine like Unreal Engine 4. The process of creating a low-res version of the mesh and UVing each assets was a daunting task, but was nonetheless successful.

From there I proceeded to create ID maps on my high-res zbrush model. To make an ID map, one simply has to fill each model section with a flat color. This ensures that the texturing process in Substance Painter is as seamless as possible. Shots of this process featured.



ID Map selection in Substance Painter

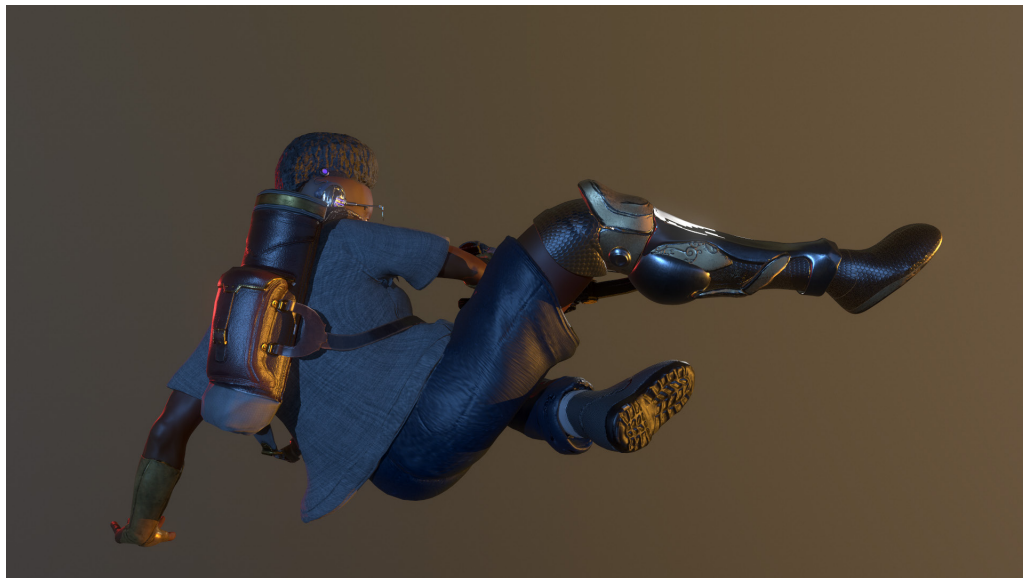


ID mapping a mesh is a powerful tool that can garner results such as this.

Renders Marmoset Rendering

The final phase of this project involved bringing the model into Marmoset Toolbag for final rendering. The rendering process was relatively straightforward. As a whole, I chose to play around with a couple of lighting profiles before settling on the final product.

Not much else to say on this process, so breakdown and final images to the right.



Final Reflections

All-in-all, I'm extremely satisfied with how this piece turned out. I was able to hit almost all of the marks I set for myself. With all the time in the world, I might flesh out the final pose with more characters, as to give her visible enemies to shoot at. As well as add a robotic AI companion that can follow her around. But that can be saved for another project. This project was a great refresher on character design, and a great intro into what it takes to make a game ready character.

Special Thanks

Special thanks to all of my friends, family and professors who've supported me throughout the years. Without them, none of the work featured in this book would be possible!

