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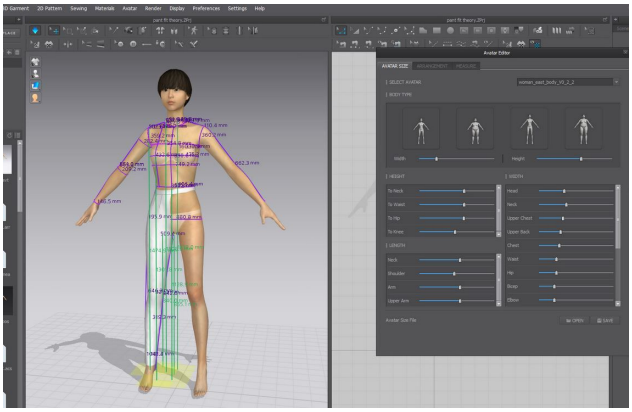
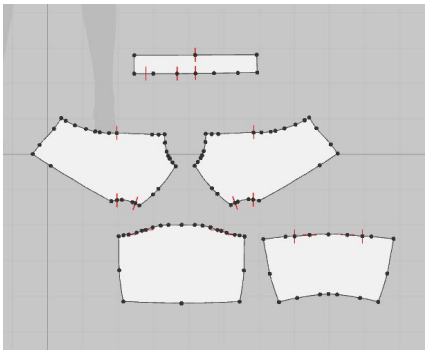
FSAD 2660

Project 2 Individual Research: CLO3D Virtual Fit



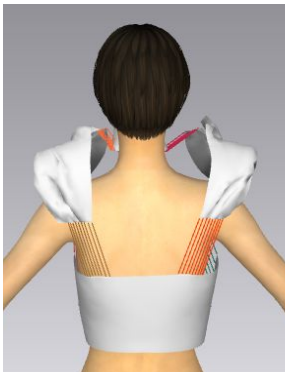
I began recreating my team's full scale outfit using CLO3D virtual fit software by first measured the fit model we used to develop our physical sample, a size 8 Wolf dress form. I measured our form and changed the measurements of the 3-Dimensional avatar in CLO3D for an accurate sense of fit. CLO3D allows users to change the measurements of their avatars easily in several areas, making this task quite simple.

I then used Optitex PDS 15 to digitize our flat patterns in order to import them into CLO3D. CLO3D makes it very straight forward for users to import patterns from Optitex if they are saved in the right format. However, I first began using CLO3D for my first garment with patterns that had seam allowance, as this is how we generally use patterns in software such as Optitex. I soon discovered that CLO3D's software does not sew using seam allowance, and the seam allowance lines on my patterns were actually visible on the surface of my garment as thin blue lines after I had already simulated the fit. Once I figured out that CLO3D does not use seam allowance, I went back to Optitex and saved the patterns without seam allowance before starting over in CLO3D.



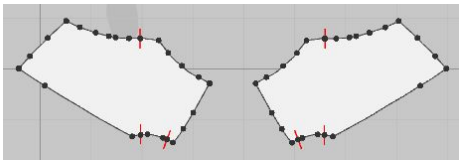
I first imported the new patterns into CLO3D and arranged them on the 2-Dimensional screen in a way that allowed me to better understand the right way to construct the top. Since these patterns are not conventional shapes, their

notches also helped me know which segments I should sew. The first time I tried to simulate the fit of this top, I could not manipulate the neck strap or sleeves, the first two rows of patterns in the image, in a way that made them wrap around the body correctly. I then learned of the setting that places blue fit dots around the body. This setting allowed me to click a pattern piece and then find a blue dot on the right area of the avatar which wrapped the pattern around that body part rather than leaving the pattern flat. After using this setting, I was able to place the patterns correctly and sew each segment together. This way, each seam line, represented by the colored lines connected each piece in the photos, was able to wrap the body correctly and avoid simulation issues. Although I was eventually able to figure out how to manipulate the patterns correctly, this process was very time consuming and not intuitive. To help better CLO3D's user-friendly experience, I suggest that there should be a more clear setting that allows patterns to contour the body or that patterns automatically arrange this way when placed near certain areas of the body that are particularly hard to simulate when flat, such as collars, sleeves, waistbands, and any cuffs.

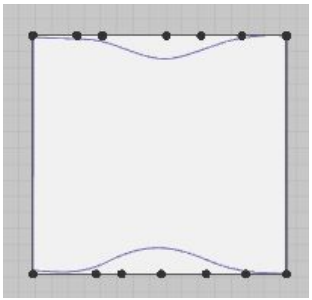


Once the patterns for the top were placed around the body, I simulated the fit of the garment. Although the piece was sewn correctly, the sleeves did not seem to fit correctly. Rather than laying flat as they should, the pieces bunched in the wrong places and seemed to have excess fabric that created a different

silhouette than the physical garment. Since the patterns I used were the same as those my team used to create the real sleeves, I believe this was a draping and simulation issue within CLO3D because the physical properties of the actual fabric we used could not be exactly simulated. While our fabric was very stretchy and folded up to create a more sleeveless look when actually sewn, I could not achieve this in CLO3D. To better visually represent the garment, I decided to alter the patterns slightly and remove some of the excess fabric. To achieve this, I increased the area of the sleeve that would be sewn to the collar and decreased the lengths of the front and back inner sleeve straps. This better allowed the sleeves to lay flat and create the same silhouette as the physical garment. After I made these changes, the sleeves did not pucker, bubble, or pull the collar in a way that deformed its shape. I am aware of the limitations of virtual fit software, as it can never behave exactly as physical fabric would, but after this experience I feel that CLO3D could increase the variation in the fabric types they offer. Even after changing the fabric properties, the 3-Dimensional garment properties did not change significantly or noticeably. It surprised me to see no changes, especially because the default fabric was woven and the fabric I chose was a very stretchy knit. From my experiences in this class, I know that these two types of fabric behave extremely differently in sewing, drape, and especially in fit.

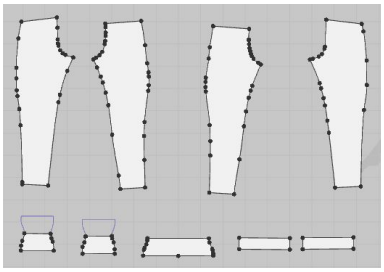


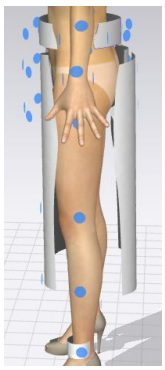
After fixing the sleeves on the top, I imported the patterns for my leggings. However, I had to fix some of the patterns for this garments as well. The main issue I had with these patterns was in the pattern for my back waistband. Rather than following the



curved lines of the pattern I digitized in Optitex, the pattern piece in CLO3D created a square with the curved lines present as internal lines that were thin and blue, as the seam allowance did with the first patterns I tried to import for the top. To fix this, I had to use the edit point and edit curve tools to make the pattern piece the correct shape. This same issue happened to me previously when I was completing the introductory CLO3D class assignment. In giving feedback to CLO3D, I would ask why this happens when there are no issues with the patterns when they are digitized and used in Optitex. I also had to adjust my waistband and cuff patterns because they were developed to be doubled over to create a smooth edge that did not need to be finished in the real garment. However, I am not sure this is possible in CLO3D, so I cut each of these patterns in half to make the width the right width that would show in the garment after sewing. To make virtual fit more realistic, CLO3D should have an easy way to make folded pieces in this way.

After editing the patterns, I arranged them just as I did with the patterns for the top. I then used the blue dots to arrange the patterns around the body and contour them correctly before attempting to sew them together. This way, as I sewed them, none of the sewing lines looked incorrect or got lost in the avatar's body. When I simulated the fit of the leggings, they came together well, but the cuffs at the hem of the leggings were difficult to attach. Even after using the blue





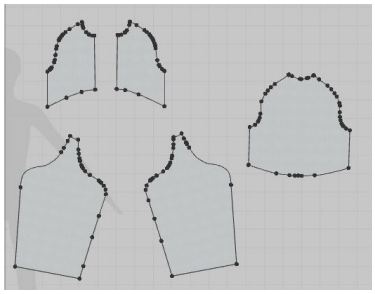
dots to arrange the cuffs around the avatar's ankles, they kept getting lost in the body or fitting around only one half of the leg. Eventually, I was able to play with the position of the cuffs until they fit around the leg, but I would suggest that CLO3D find a way to avoid glitches where the garment goes through the body unrealistically in the future. In this case and others throughout my experiences using CLO3D, the arrangement of the the patterns around the avatar affect the simulation far too much and this placement often causes fabric to get lost in the body on the first try.

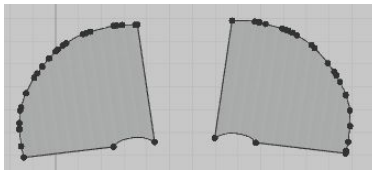
After completing the simulation for both the top and the leggings, I began adding details to the fabrics. I used pictures of the fabrics that my team used in our physical outfit to create the appearance of the same textures and patterns. One issue I had with these photos was that I could sometimes see the edges of the photos due to color variation. I mostly avoided this problem by making a pattern brush in Adobe Photoshop and saving that to use in CLO3D, but I think it would be very helpful to have a similar feature for fabrics and textures directly in CLO3D for easy use. I used the navy base fabric for those parts of the physical outfit that did not have the wrap detailing, and the white fabric to represent where wrapping would be even though this could not be achieved on CLO3D itself.

I then changed the fabric settings to be closer to the properties of the real fabrics we used, but as I mentioned earlier this was not successful in actually changing the physical properties of the garments themselves. I would love to see more variation in the different fabric types that CLO3D offers. After altering the fabrics, I added topstitch

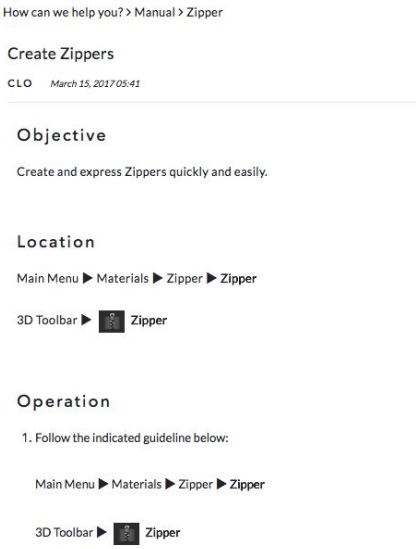
details in the applicable areas. I used bartacking over the areas where the sleeves were joined to the top and overlock stitches on each side of the seams on the leggings that were joined with the flatlock machine. The only issue that I had with CLO3D at this stage was the absence of a snap feature. There are settings that allow for the use of buttons and buttonholes, but none that represent areas of a garment that may be joined with sew-on snaps. Therefore, I joined the collar on the top with a regular seam rather than with the snaps that we used on our physical garment to allow for wearers to easily take the top on and off.

After completing both the top and the leggings, I imported the patterns for my team's jacket. I first arranged the patterns in the 2-Dimensional working area and assured that there were duplicate patterns for each side of the body where necessary. This garment was the only one of the three that did not present any issues when I imported the patterns into CLO3D from Optitex. I did not need to alter the patterns in any way. After checking each pattern, I arranged each piece around the body using the blue dots. I could not do so with the hood pattern due to its atypical shape, so I instead approximated the correct placement manually and kept the pattern flat before sewing. I waited to arrange the hood pieces until after sewing the body of the jacket together to avoid confusion. After simulating the fit for the body of the jacket, I changed the fabric properties and texture to try to make it more similar to the physical jacket. However, I still had





trouble getting the jacket to drape correctly, even compared to the trouble I had with the other garments. It did not fall straight, wrinkling and folding in the wrong places. I believe this is because it was hard to simulate the correct weight of the fabric. I also chose not to include the jacket facings because there did not seem to be a clear way to do so in CLO3D. Additionally, I do not think there is a way to create a zipper in the version of CLO3D we have access to. After trying on the software and trying to find a solution online, I still could not create a zipper. The CLO3D website gave instructions on how to create a zipper, but the specified settings did not exist in our version of the software.


How can we help you? > Manual > Zipper

Create Zippers

CLO *March 15, 2017 05:41*

Objective

Create and express Zippers quickly and easily.

Location

Main Menu ▶ Materials ▶ Zipper ▶ **Zipper**

3D Toolbar ▶ **Zipper**

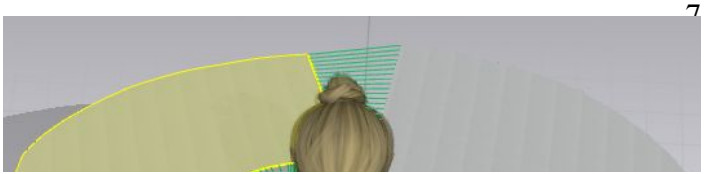
Operation

1. Follow the indicated guideline below:

Main Menu ▶ Materials ▶ Zipper ▶ **Zipper**

3D Toolbar ▶ **Zipper**

To give the appearance of a zipper on the jacket, I downloaded a photograph of a zipper of the right color online and used it as a topstitch texture in CLO3D. This process made the jacket appear to have a zipper, although I could not create a pulling mechanism or actually zip up the jacket. I also added coverstitch details along the hem and sleeve hems. I had issues with the coverstitch setting because the back stitches kept showing up on the face of the fabric. The topstitch section of CLO3D is not very intuitive or user friendly, which I believe should be addressed. After being unsuccessful in creating the double line stitch that a coverstitch creates on the face of fabrics, I ended up creating a regular double line stitch on the face of the fabric and an overlock stitch on the back to mimic the effect of a coverstitch.



After completing the body of the jacket, I then arranged the hood patterns around the jacket and sewed them together and to the neckline of the jacket. Although the sewing was done correctly, the hood draped very poorly. After trying to press, steam, and pull the hood down manually, the jacket was still bunching in several places. I then attempted to tack the hood in key places so it would lay flat. This did look slightly better, but it caused puckering issues in other areas and the jacket did not stay in place after the tacked stitches were removed. I am not sure why I had so many issues with the drape of the jacket, as the garment itself fit and the physical jacket did not have these same issues, but I have noticed that drape is often off in CLO3D.

Overall, I learned a lot from the CLO3D virtual fit exercise, but I also encountered many frustrating glitches and fit issues that are not the same with physical garments. I believe that CLO3D's software is helpful in assessing fit before physically sewing a garment together and in quickly exploring various colorways and patterns. However, I do not believe the software in its current state can accurately simulate physical garments successfully in terms of drape.

After simulating all three garments and successfully adding their fabrics, textures, and topstitch details, I developed three different colorways for the outfit. The first colorway was consistent with the original outfit, using navy for the base leggings and collar and white for the jacket and wrapped areas. I developed the second and third colorways based on the other hues in the color story for my team's line. The second colorway uses grey for the base leggings and

collar and black for the jacket and wrap details. These colors are consistent with one of my team member's half scale prototypes. The third colorway uses brown for the base leggings and collar and white for the jacket and wrap details. These colors are consistent with my half scale prototype as well as another team member's half scale prototype. With these three colorways, I employed every hue in our color story and matched them so each combination is still a



successful and effective design.