ADITI GALADA

Design Portfolio

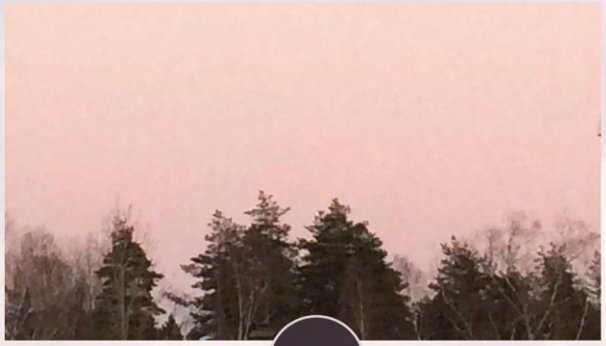
2021

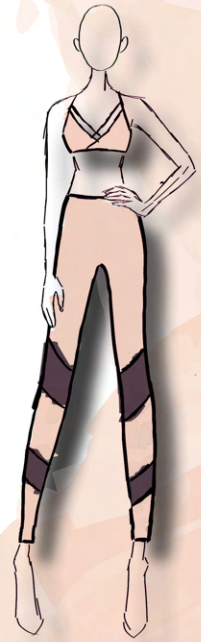
Digital Prototyping

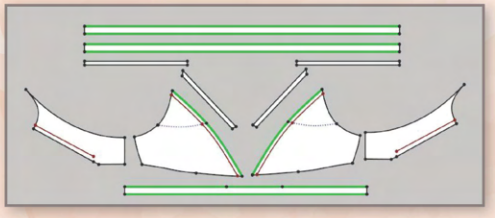
HABITAT

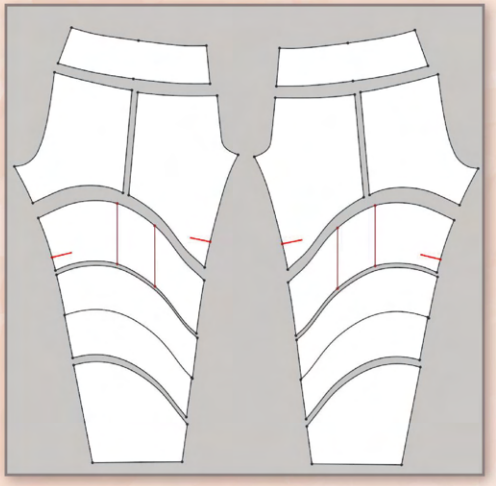
CLOTHES TO LIVE IN

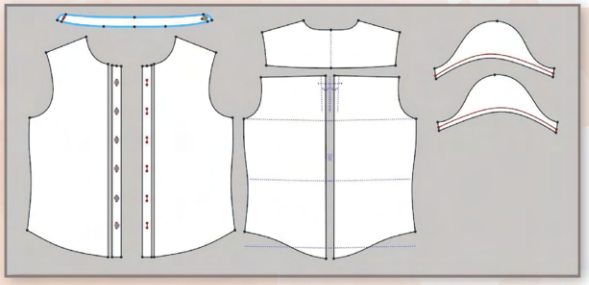
The collection supports the diverse roles a women has to play to succeed in various facets of life. Shades of peach reprresent the romantci side and shades of lavendar represent grace, elegance and luxury. Bold silhouettes make the ultimate juxtapose between power and elegance empowering the wearer to deal with everyday challenges with a positive strength.

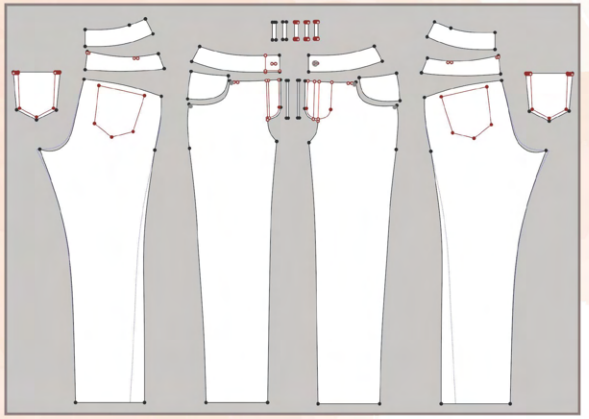


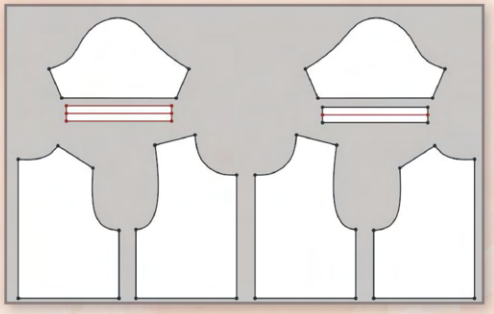


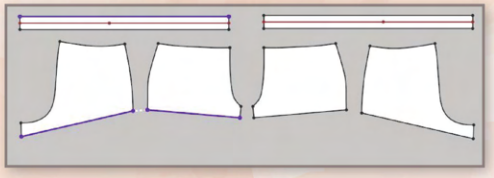


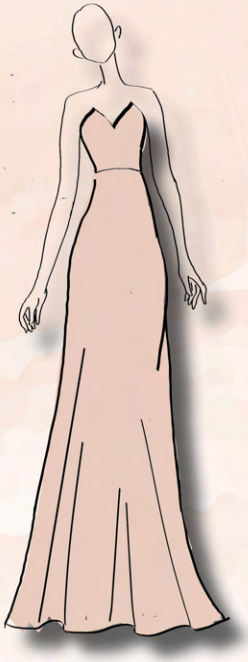


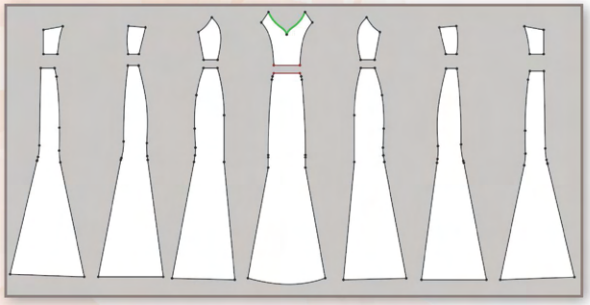












HABITAT
CLOTHES TO LIVE IN

SEASON	SPRING 2022	STYLE NO.	001
CATEGORY	CASUAL	FABRIC	100 % Cotton
NAME	Jeans	SIZE	XS, S, M, L
DESCRIPTION	5 pocket jeans		

HABITAT
CLOTHES TO LIVE IN

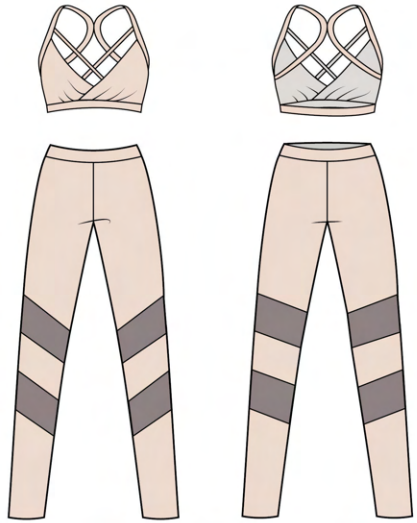
SEASON	SPRING 2022	STYLE NO.	002
CATEGORY	FORMAL	FABRIC	100 % Silk
NAME	Shirt	SIZE	XS, S, M, L
DESCRIPTION	Mandarin collar shirt		

HABITAT
CLOTHES TO LIVE IN

SEASON	SPRING 2022	STYLE NO.	003
CATEGORY	CASUAL	FABRIC	100 % Cotton
NAME	T-Shirt & shorts	SIZE	XS, S, M, L
DESCRIPTION	Crop top and shorts with elastic		

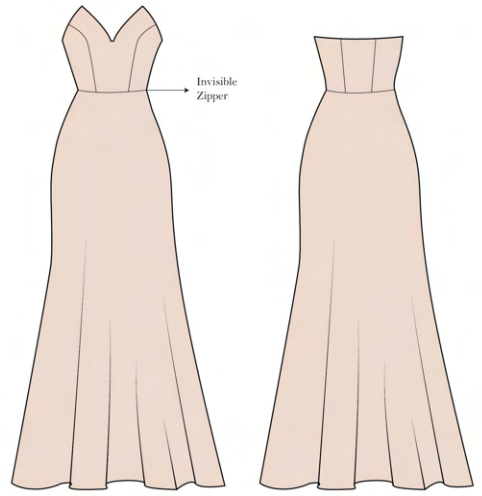
HABITAT
CLOTHES TO LIVE IN

SEASON	SPRING 2022	STYLE NO.	004
CATEGORY	SPORTSWEAR	FABRIC	90% Nylon 10% Spandex
NAME	Bra & Legging	SIZE	XS, S, M, L
DESCRIPTION	Racer back bra top and legging		

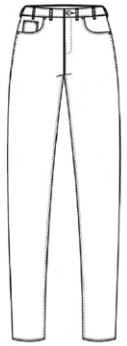


HABITAT
CLOTHES TO LIVE IN

SEASON	SPRING 2022	STYLE NO.	005
CATEGORY	EVENING WEAR	FABRIC	100 % Silk
NAME	Gown	SIZE	XS, S, M, L
DESCRIPTION	Off-shoulder silk gown		



HABITAT CLOTHES TO LIVE IN	SEASON	SPRING 2022	STYLE NO.	001
	CATEGORY	CASUAL	FABRIC	98% Cotton 2% Spandex
	NAME	Jeans	SIZE	XS, S, M, L
	DESCRIPTION	5 pocket jeans	FIT	Tight



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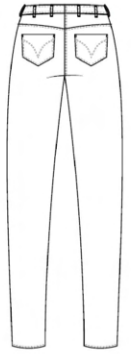

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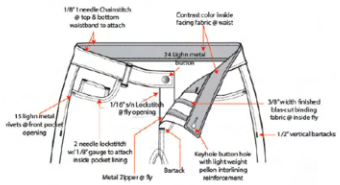

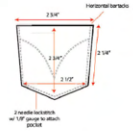

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	NAME	Jeans	SIZE	XS, S, M, L
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Code	Description	QC	Tol(-)	Tol(+)	6
D0001	Waistband - Circumference Top Contour	Yes	3/4	3/4	29 1/2
D0002	Waistband - Circumference Bottom Contour	Yes	3/4	3/4	32 1/2
D0016	Low Hip - Position from Top Waist Edge	Yes	0	0	6
D0018	Low Hip - Circumference (3 Point Measurement)	Yes	3/4	3/4	37 1/2
D0065	Thigh - Circumference 1 Inch Below Crotch (Flat Fold)	Yes	1/2	1/2	24
D0023	Knee - Circumference (13" from the crotch point)	Yes	3/8	3/8	17 1/4
D0026	Leg Opening	Yes	1/4	1/4	13 3/4
D0037	Front Rise - Top Waist Edge to Gusset Seam	Yes	1/4	1/4	9 1/4
D0041	Back Rise - Top Waist Edge to Gusset Seam	Yes	1/4	1/4	14 1/2
D0047	Gusset - Width	Yes	1/8	1/8	2
D0048	Gusset - Length	Yes	1/4	1/4	9
D0051	Inseam - Pants Regular	Yes	1/2	1/2	27 1/2
E0044	Hand Pocket - Opening	Yes	1/4	1/4	7
E0044	Back Pocket - Opening	Yes	1/4	1/4	5 1/2
E0057	Pocket - Bag Length	Yes	1/4	1/4	10 1/2
E0058	Pocket - Bag Width	Yes	1/4	1/4	0

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	DESCRIPTION	5 pocket jeans	FIT	Tight

	BILL OF MATERIALS						
Material	Quality Details	Supplier	Price	Qty	Placement	Black B56	Purple P76
Fabric							
Woven Cotton Stretch (Solid), Weft stretch	97% Cotton, 3% Elastane / Woven	Joann's Fabrics	$3.55	2 $7.10	Shell Entire Garments	Black	Purple
Woven Pocketing Poplin	100% Cotton / Woven	Joann's Fabrics	$1.45 yd	1 $1.45	Pocketing Pocket Bag	Bleached sand	Bleached sand
	Trim						
Interlining Recycled fusible interlining, 47 g/m2 90cm x 100m rolls	100% Polyester	Mood Fabrics	$ 0.51 m	1 $ 0.51	Interlining – reinforcement as needed	White	White
Snap Metal snap with vintage logo – black enamel	TBD	Mood Fabrics	$ 0.10	1 $ 0.10	Snap: CF	Nickel	Black
Zipper Coil closed-end zipper autolock slider in enamel finishing with plastic top stopper	YKK Zipper DTM	Mood Fabrics	$0.10	1 $ 0.10	Zipper: CF Fly	Black	Purple

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	CATEGORY	CASUAL	FABRIC	98% Cotton 2% Spandex
	NAME	Jeans	SIZE	XS, S, M, L
	DESCRIPTION	5 pocket jeans	FIT	Tight

Pocket embroidery for heavy weight denim	Polyester thread	Mood Fabrics	$.10	1 $ 0.10	Centered on both back pockets	Grey	Grey
Thread Perma Core Thread (sized) Polyester wrap, polyester core	Sewing thread 40 tex	Mood Fabrics	$ 0.650	1 $ 1.0	Thread – Top stitches	Grey	Grey
Thread Perma Core Thread (sized) Polyester wrap, polyester core	Sewing thread 40 tex	Mood Fabrics	$ 0.650	1 $ 1.0	Thread – Loopers	Black	Purple
Thread Textured (sized) polyester thread	Sewing thread 18 tex	Joann's Fabrics	$ 0.650	1 $ 1.0	Thread – Loopers	Grey	Grey
Label Trim Center-fold interior woven in-seam label with Habitat logo	100% Polyester 37mm x 37mm	Factory Sourced	$0.03	1 $0.03	CB Main Label	Peach	Peach
Label trim fiber content, care instruction, care symbol, care number	100% Polyester	Factory Sourced	$0.03	1 $0.03	Care Label Placed 2" at inner WLS from front WB seam from side seam	White	White

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Tag General Cover		Factory Sourced	$0.03	1 $0.03	Hangtag cover	Black	Black
Tag Fit tag		Factory Sourced	$0.03	1 $0.03	Fit Hangtag	Black	Black
Tag Hangtag SKU Sticker		Factory Sourced	$0.01	1 $0.01	Sticker	White	White
Attacher Plastic swifttack loop fastener	130mm end to end	Factory Sourced	$0.01	1 $0.01	Fastener	Clear	Clear
Bag Polybag with holes (small)		Factory Sourced	$0.03	1 $0.03	Poly Bag	Clear	Clear

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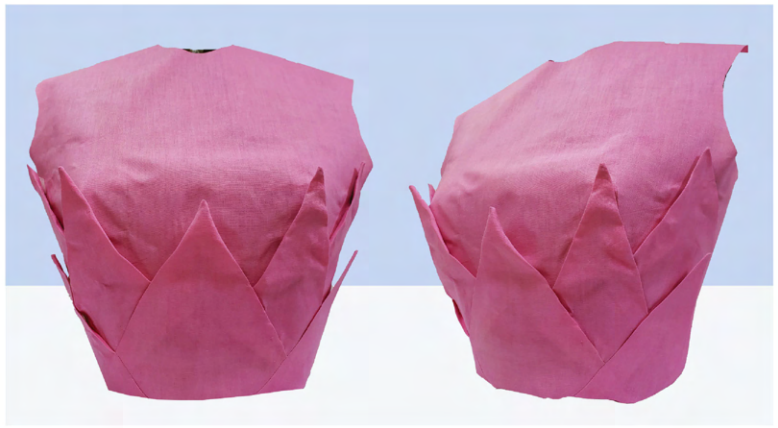
	NAME	Jeans	SIZE	XS, S, M, L
	DESCRIPTION	5 pocket jeans	FIT	Tight

Colorway	Body Color	Embroidery	Top Stitch Color	Bartack Color
1	Black B56	Light grey 11-0648	Light grey 11-0648	Black 19-0303
2	Purple P76	Dark grey 11-7839	Dark grey 11-7839	Black 19-0303

Transformational Reconstruction



Garment Construction

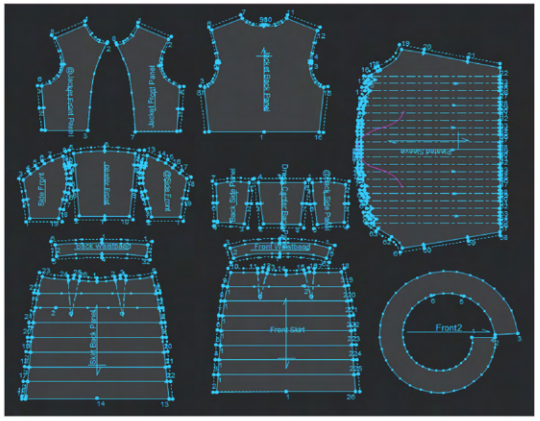
Sakura

A combination of handwork and new technologies are used to create the outfit. To create the garment, first, patterns were developed, designs for textures were made, laser cutting and engraving were done, panels were sewn together and the 3D printed flowers were attached to the waistband.

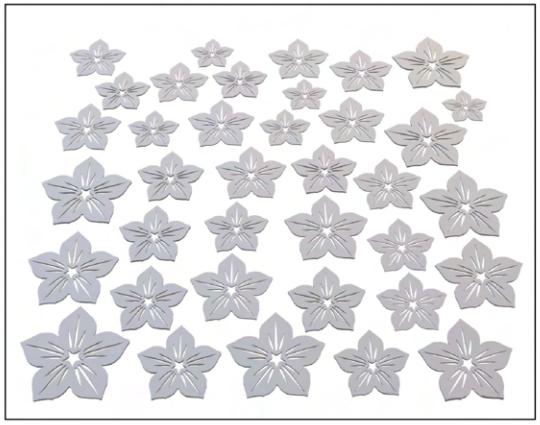
• Utilized 2D/3D software programs (Adobe Photoshop, Adobe Illustrator, Optitex PDS and Clo3D) to visualize and improve the design

• Experimented with novel production methods (3D printing, laser cutting & engraving and sonabond ultrasonic fusing)

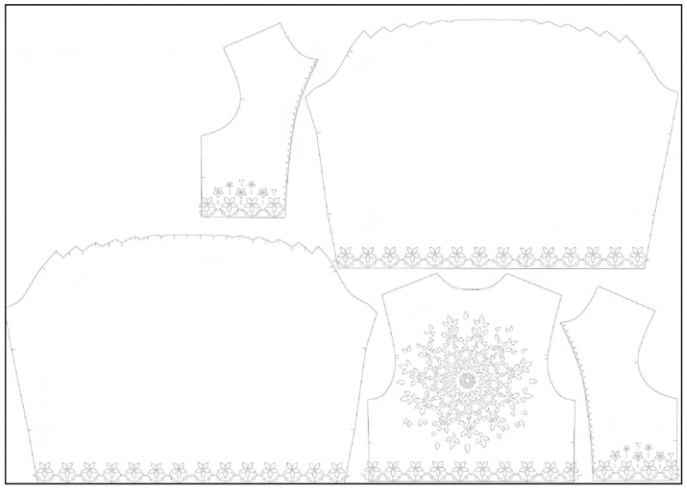
Pattern Making

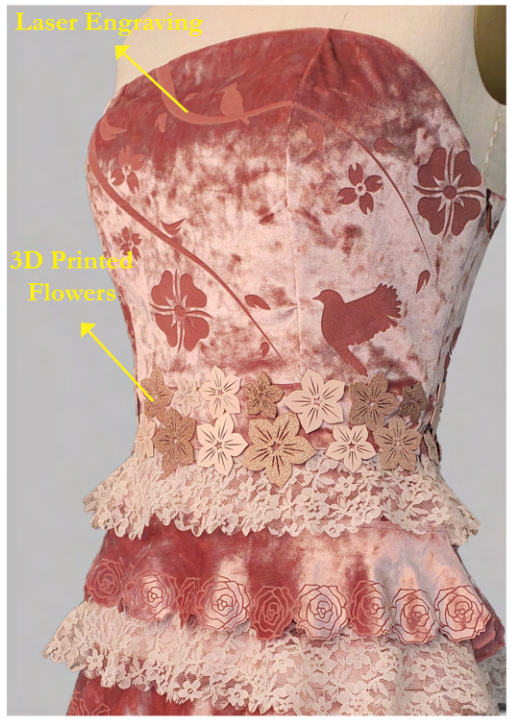


3D printing File



Laser Cutting File





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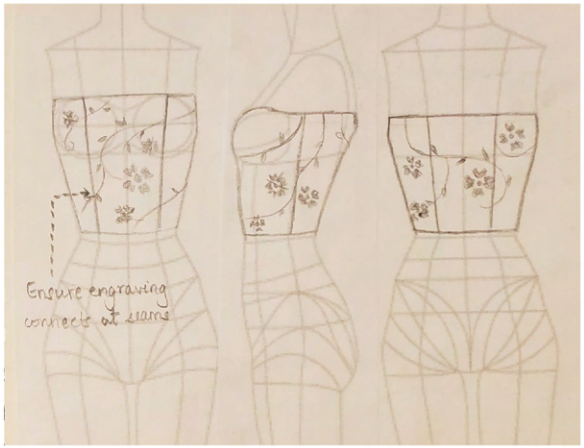
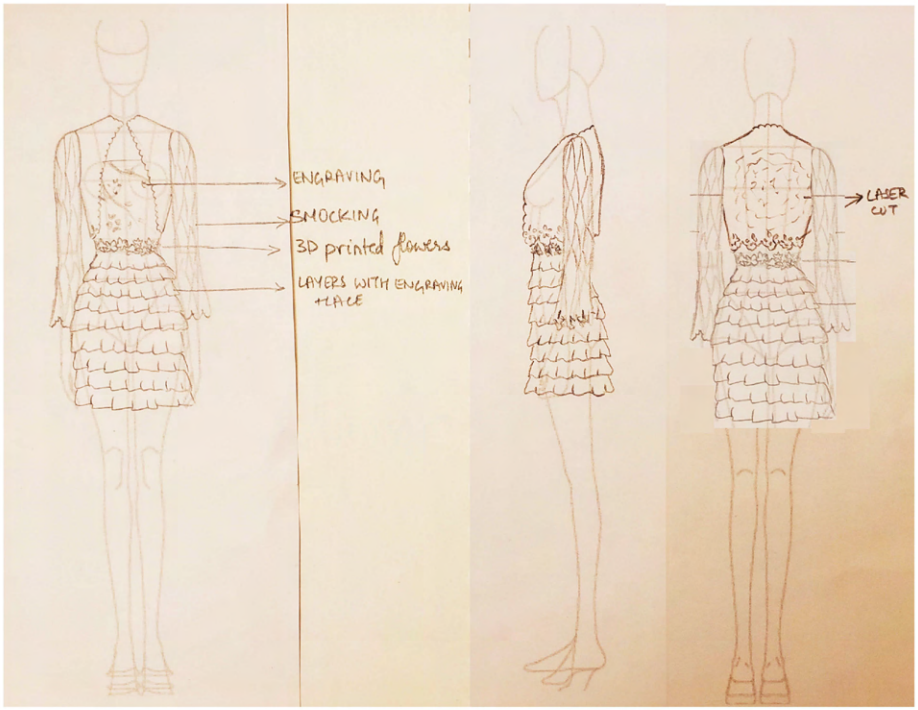
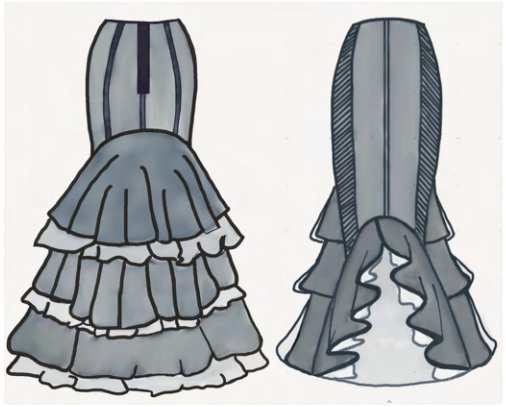


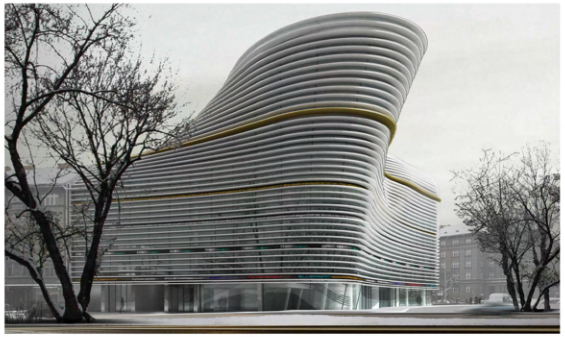
A romantic look was achieved through the hourglass silhouette which has known to be a charm for generations. The shades of pink relate to joyfulness and the dark shade of purple is associated with power. The engravings on the dress are inspired by cherry blossoms which signify beauty and mortality. They carry great importance in the Japanese culture and are called “Sakura” in Japanese. The smocking and motif on the jacket are inspired by the tree of life which signifies strength and growth in Buddhism.

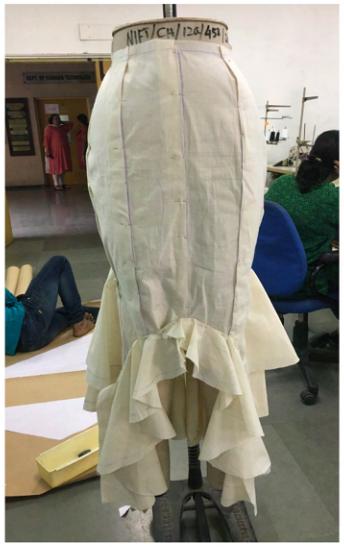


Forever New
Or Retro?

The iconic dove tail ruffled skirt gives the wearer a casual chic look. The layered flounces with polka dots & delicate tulle and tantalizing pin tucks on the side panel unveil a playful femininity.

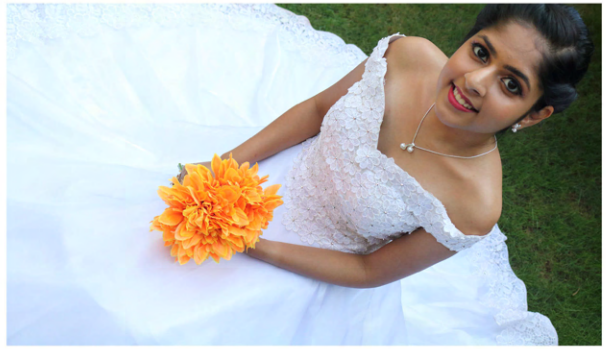






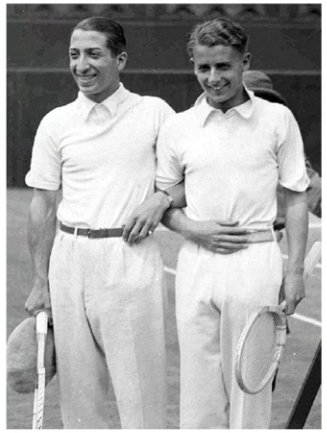
Classic Fairytale

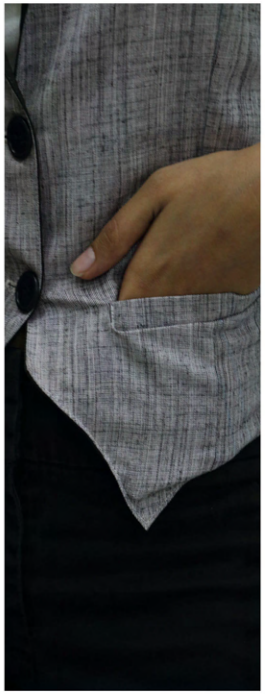
While symbolizing the journey from impediment to liberty the plush and comfy ball gown utilizes floral appliques and elegant fabrics to give a sense of depth and dimension which is sure to take every girl to her own fairyland.

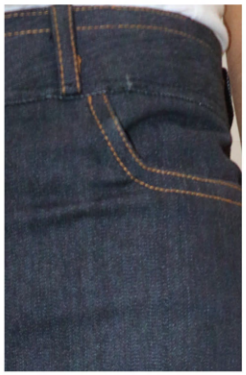


Work Pret

Pret is a range of modern power dressing garments. Crafted with superior cottons and outstanding finishing, these garments are sure to make a statement. The reversible waistcoat brings with it a new freshness. The timeless indigo jeans has an extraordinary calming effect when paired with a polo t-shirt.

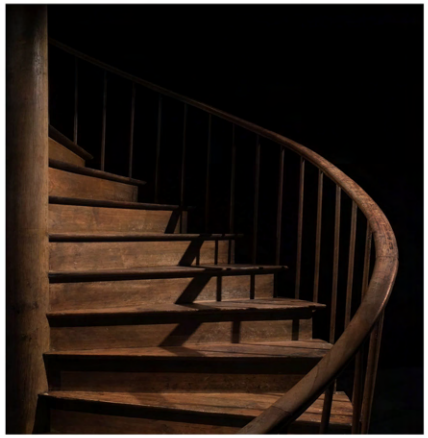


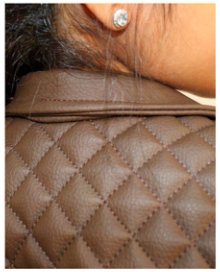




NonViolent Overlay

Clad in this satin lined quilted faux leather jacket, you have powers beyond ordinary. The power to woo every man, power to make others bow in your subservience and power to rule the world!





Daily Occasions

Fashion is best suited when combined with nature. A nature inspired collection, where style meets sustainability, created with attractive designs and blushed with a natural strawberry dye, adds a touch of cotton to daily occasions.

Natural Dye

Projects

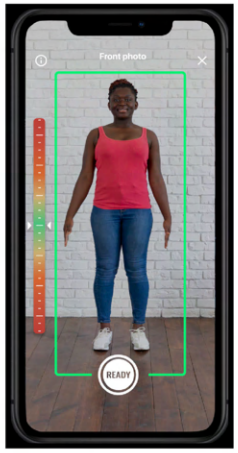
Mass Customization through Mobile Body Scanning

(Cornell Digital Fashion and Body Scan Research Lab)

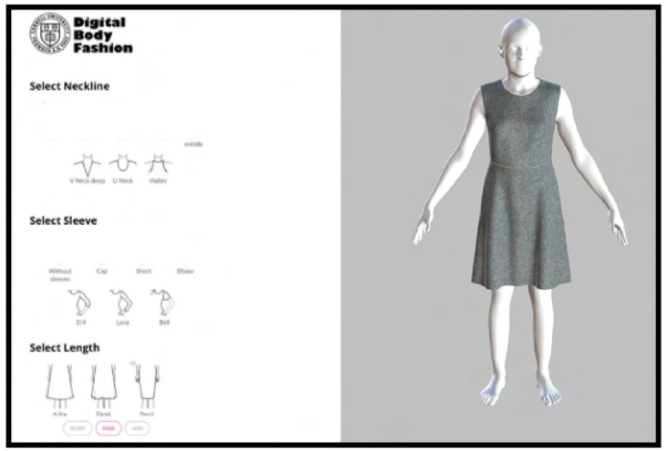
Collaborated with a five member research team to explore:

(1) how online mass customization experience differs when colllecting measurements manually and through a mobile body scanning app

(2) how the garments created using manual/ body scan measurements fits the customer.



1



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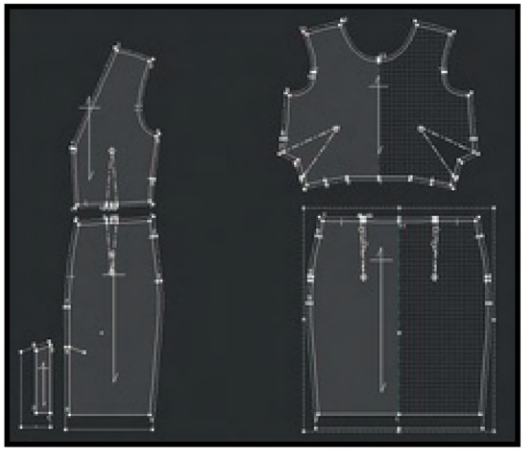


3

4

1. Capture Measurements

Treatment Group

Participants were scanned through a mobile body scanning software program to extract 70 body measurments

The 3D body avatar was exported as an .obj file into the pattern making software

Control Group

Provide body measurements by manually measuring with a tape

2. Website for Dress Customization

The users could choose from a set of necklines, sleeves, dress type, length and shape to create a customzied dress

3D images of selected style combinations on a default avatar was updated dynamically

3. Garment Development

Developed custom-fit patterns, laser cut on a 100% polyester fabric and created the garments

4. Fit Testing

Surveyed participants to evaluate fit perception of the rendered prototype, expectations from the dress and customization experience

Collected images and feedback on fit of the physical dress from participants

Measuring body dimensions is complicated and is subject to error when recorded manually by novice gaugers. The fit of garments of the control group (manual measurement) varied largely depending how accurately the participants recorded their measurements.

When developing patterns for the treatment group, the fit was checked by running simulations on customized avatars obtained through body scanning. As a result, the garments created for the treatment group fit majority of the participants well without drag lines or fold lines.

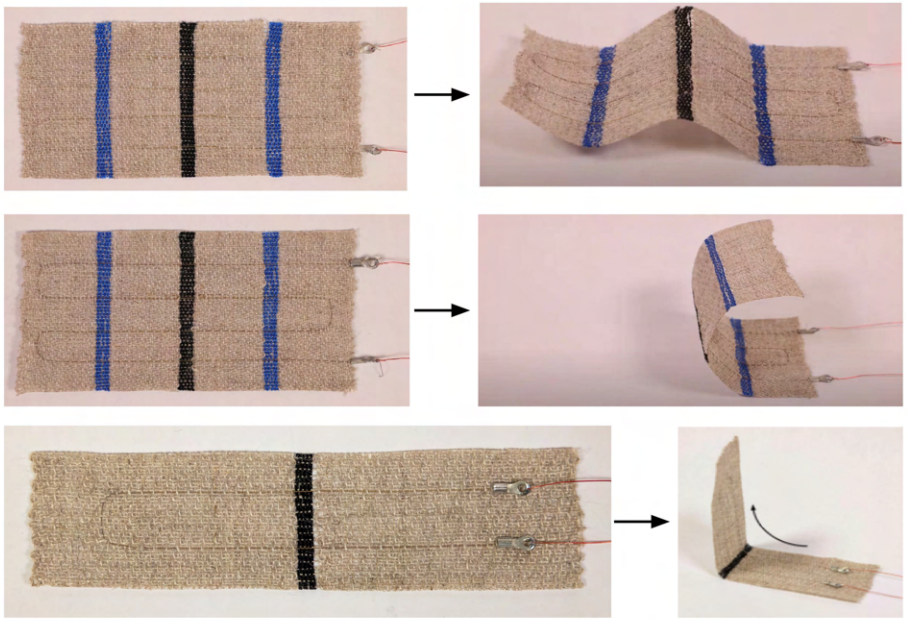
Shape Changing Woven Patch

(Hybrid Body Lab, Cornell University)

Collaborated with a four member research team to develop a woven patch that enables diverse movements such as bending, expanding, and shrinking on actuation.

- Embedded shape memory alloy (SMA) wires into the weave to achieve a seamless form factor
- Utilized different weave techniques and yarns to manipulate the stiffness of the patch locally and enable controlled movement
- The patches can be attached or detached easily without requiring permanent alterations

A few examples of shape change on actuation are shown below:



The patches can be used to improve functionality or enhance aesthetics.

Weaving the patch on handloom

Developing a Prediction Model for Crotch Length Measurement

(Cornell Digital Fashion and Body Scan Research Lab)

Improper garment fit creates inconvenience and dissastifaction among customers. The crotch length measurement is crucial to determine the comfort and aesthetic fit of bifurcated garments such as trousers. However, measuring the crotch length is difficult and subject to error when recorded by novice gaugers.

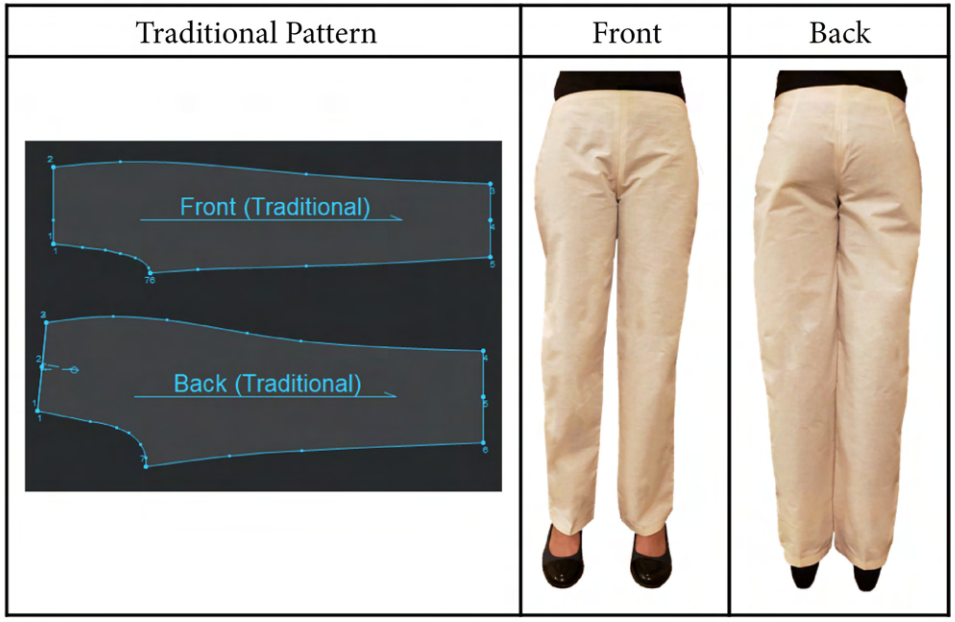
Developed multiple regression models from body measurements of 200 randomly selected women in the size USA database to predict crotch length:

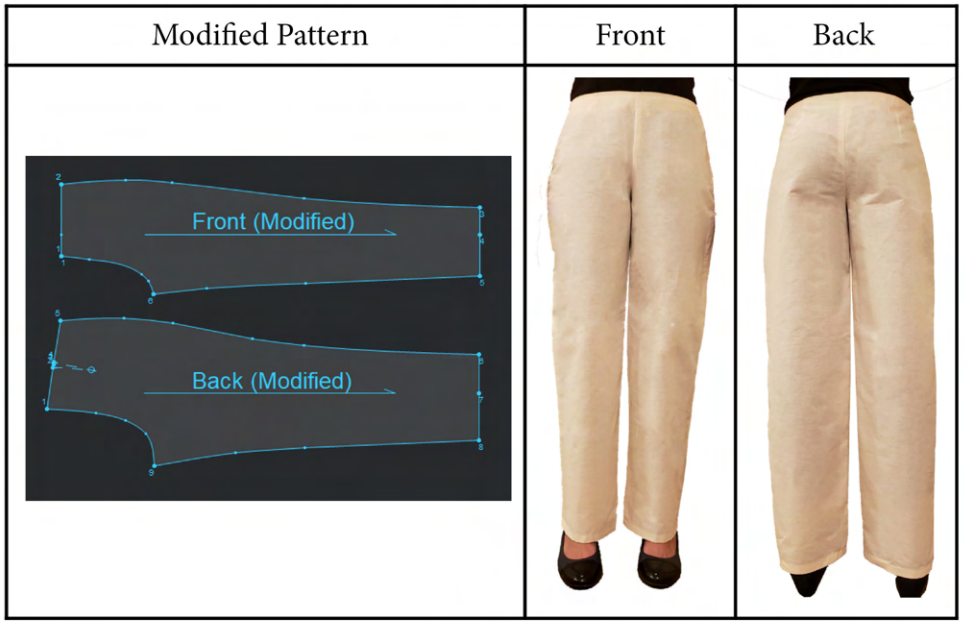
	Ordinary least square regression			Ordinary least square regression			Ordinary least square regression			Lasso regression			Principal Component Regression		
K	4			5			6			5			4		
Measure	Training	Validation	Test	Training	Validation	Test	Training	Validation	Test	Training	Validation	Test	Training	Validation	Test
BIC	480.15	183.26	184.15	478.88	183.73	184.17	483.12	186.12	186.79	500.51	178.55	176.68	609.91	211.21	211.09
AICc	464.23	175.68	176.56	460.51	175.41	175.84	462.27	177.25	177.93	482.13	170.23	168.36	594.05	203.62	203.50
RSquare	0.8601	0.8872	0.8771	0.8625	0.8957	0.8871	0.8632	0.8990	0.8900	0.8547	0.8515	0.9053	0.6177	0.6315	0.7545
RSquare Adj	0.8552	.	.	0.8564	.	.	0.8558	.	.				0.6042	.	.

The lasso regression model was chosen as it explained 90.53% of varitation in crotch length using just five easy to measure predictor variables.

Crotch Length = -10.67 - 0.17 x (height) + 0.47 x (hips) + 1.02 x (waist height) - 0.46 x (knee height) - 0.10 x (arm length)

All measurements are required to be in imperial units





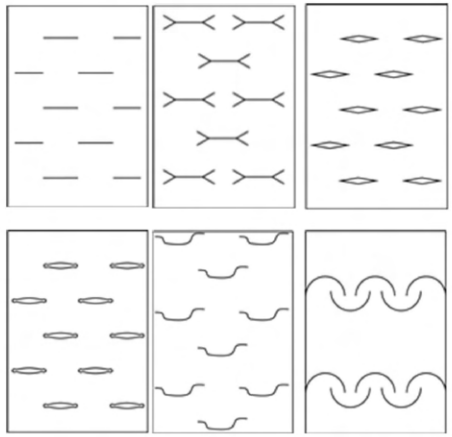
Sportswear T-Shirt for Enhanced Ease of Motion & Ventilation (ongoing project)

(Understanding Functional Aspects of Clothing & Design)

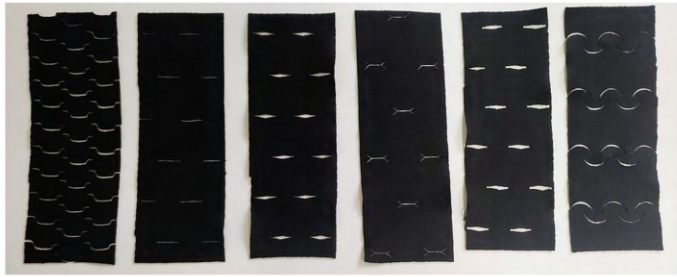
Sportswear garments must be designed to provide physiological as well as physical comfort. Physiological comfort depends on thermal resistance and water vapor resistance. In case of poor thermal and moisture management, clothing acts as a barrier to efficient body heat transfer and leads to excessive sweating which causes the fabric to cling to the body and create discomfort. Physical comfort depends on restriction to body movement. Garments are generally designed and fitted to standard body positions. However, the body dimensions change because of strenuous exercises, extreme body movements and asymmetrical positions assumed during active sports. As a result, sportswear garments stretch more and undergo higher tensile stress. To accommodate the increased body dimension, sportswear garments should provide extra space. These problems are alleviated in sportswear garments by adding vent and manipulating fabric properties.

1. Identified locations to incorporate slits by reviewing literature on sweat dissipation and skin deformation pattern. Sweat distribution to be the maximum along the spine and skin deformation to be the maximum widthwise along the upper back and lengthwise along the obliques.
2. Laser cut kirigami patterns on fabrics with different content (nylon, polyester, spandex) and stretch (2-way vs 4-way)

Locations to incorporate slit pattern on T-shirt



Kirigami Patterns to be tested for breathability and tensile strength



Laser cut samples for testing on Instron Machine

3. As the next step, will test the samples for tensile strength and breathability through Instron and Cup Testing. The parameters will be compared using ANOVA to identify if there is significant difference between slit patterns.
4. Last, prototype of the t-shirt will be developed with the chosen slit pattern incorporated at selected location.

Fit Correction Evaluation: Pre-Training Questionnaire (ongoing project)

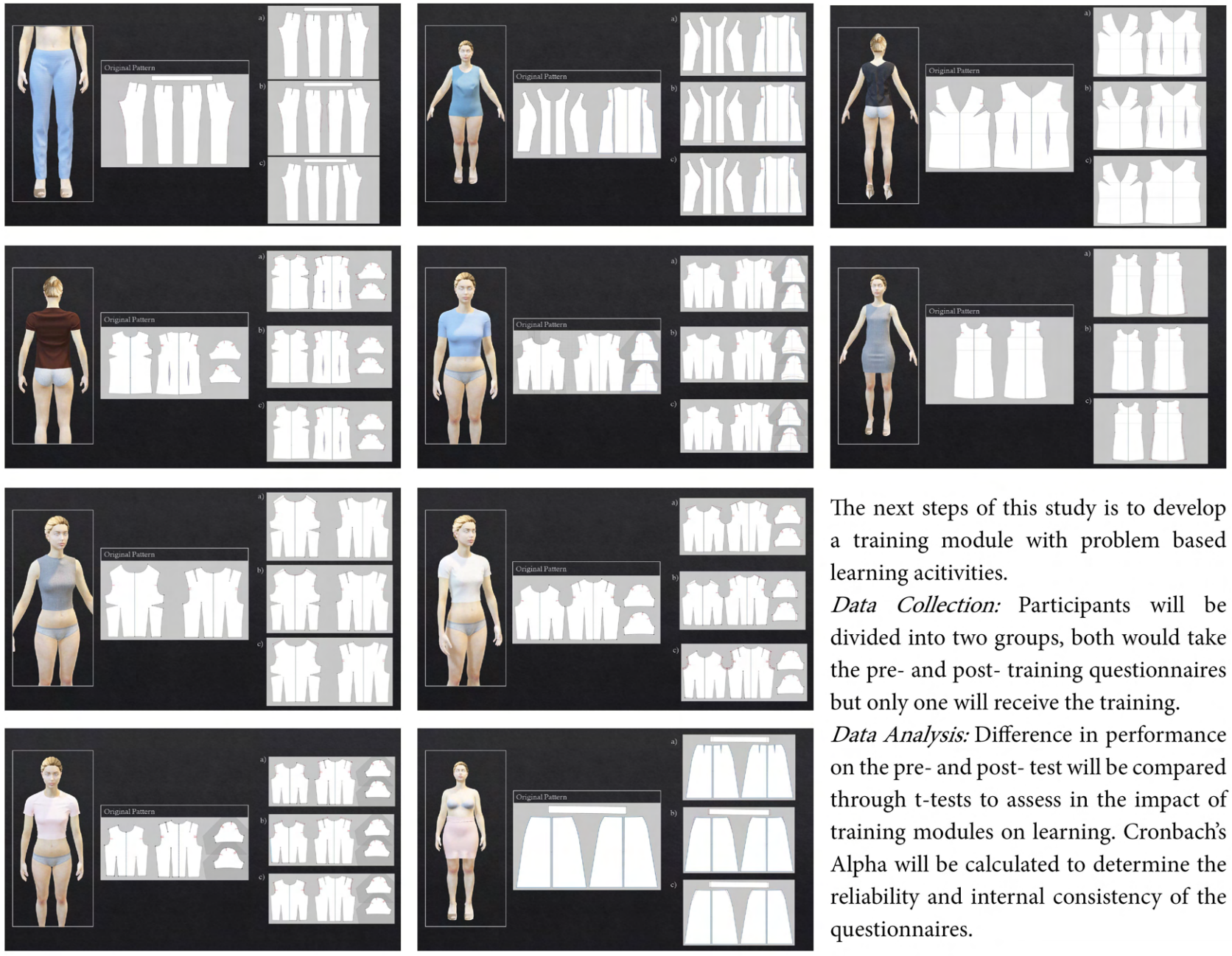
(Human Factors: Anthropometrics & Apparel)

Developed pre- and post- tests consistsing of 10 questions each using Clo3D. Participants would have to analyze the garment fit and pattern, identify the fit issue, try to visualize how the fit issue can be corrected and identify the right pattern modification that could correct the garment fit from a set of 3 options. Questions were developed based on common fit issues and correction procedures identified from books and research papers.

The questions in the pre- and post- tests were isomorphic, but not identical because participants might learn from the pre-test. The fit issues were manipulated by changing the body type of the avatar.

Fit Correction Evaluation: Post-Training Questionnaire (ongoing project)

(Human Factors: Anthropometrics & Apparel)



The next steps of this study is to develop a training module with problem based learning acitivities.

Data Collection: Participants will be divided into two groups, both would take the pre- and post- training questionnaires but only one will receive the training.

Data Analysis: Difference in performance on the pre- and post- test will be compared through t-tests to assess in the impact of training modules on learning. Cronbach's Alpha will be calculated to determine the reliability and internal consistency of the questionnaires.