

Krissi Riewe Stevenson / Kent State University

Title: Look Closely

Keywords: Denim, Laser-cutting, Engineered Design, Lace

Denim is a widely used textile with significant social, functional, and semiotic history that not only continues to be one of the most-worn textiles in the world but is one that has often been used for innovative methods (McClendon & Dennis 2016). The textile can now be found in eveningwear, accessories, skinny jeans blended with spandex, and more. This versatility and popularity make it an ideal textile for use in surface design exploration. Here, denim is used to explore the intersection of technology and craft to develop a unique aesthetic, while the making process reveals how digital technology further integrates textile design, garment design, and construction processes. The resulting garment is a modified princess seam denim jacket with an engineered laser-cut lace motif, paired with a bias slip dress. The sturdiness of denim is in contrast to the delicate quality of lace, purposely chosen to illustrate the capability of transforming the textile using both traditional cutting methods and contemporary tools such as the laser-cutter. Throughout the process, the researcher moved between the physical and digital environment for design ideation and final garment development, maximizing the capabilities of both the hand and digital tools.

The silhouette of the jacket was developed using a traditional draping process on the dress form to create the contoured, elegant shape. (Figure 1) A pattern was created from this drape, then digitized to complete the development digitally. At this step, without access to a professional digitizing tool an alternative was necessary. The researcher used knowledge of patternmaking and shape along with photos and measurements to transfer the pattern to an Adobe Illustrator file. Using this digital file, the pattern was cut from muslin and sewn to check the fit. Several needed modifications were easily conducted in illustrator before moving on to apply the lace design.



Figure 1: Draping, patternmaking

After establishing the pattern fit, the lace motif was digitally applied to the pieces. An all-over lace design created using the pattern tool in Illustrator was applied to the digital pattern pieces. The lace design was then edited to eliminate cuts across the seam allowance areas of the garment, to maintain seam durability. Several sample garments were laser-cut and tested before cutting the final garment, leading to several modifications to the design. First, the material needed reinforcement to hold the body and shape of the design, so a woven fusible reinforcement was added to the inside. This caused the fabric to be too stiff for traditional construction of the seams, so the seams were changed to overlapped seams and a scalloped edge was digitally added to the exposed seam allowance for a pleasing appearance.

Second, the lace motif needed adjustment as some areas were too narrow, creating both durability and aesthetic problems. Keeping enough detail in the laser-cuts while reducing their size proved challenging; however, because of the digital format, these changes were easily completed, executed, and tested. These tests were conducted on smaller sample swatches of fabric, then the corrected digital motif applied to the final design. (Figure 2)

After the motifs and patterns were successfully tested and established, a final layout maximizing the laser-cutter bed of 40" x 28" was created, the denim was prepared with the fusible reinforcement, and the final pieces cut using the laser-cutter. After cutting, the jacket was assembled by hand. The overlapped seam allowances were enhanced and executed with proper fit ease by hand-sewing with a seed-bead detail. To highlight the lace motif and complete the look, a cream silk slip dress using waste materials was made to wear underneath the jacket.

Transforming this hardworking denim material into something delicate and elegant was the conceptual inspiration for this look. Previous design research included time spent working with denim and the laser-cutter where small etching and cutting samples suggested the laser-cutter could be used to cut delicate shapes from reinforced denim. Because lace is recognized as delicate, formal, and expensive, it would be the ideal motif to blur the identity and perception of both lace and denim. Furthermore, the use of the laser cutter in this application created an aesthetic that is also not distinctly digital or hand-worked, blurring the expected appearance of laser-cut materials. In this way, the skills of traditional craft processes, textile properties, and digital tools merged in the development of a garment that celebrates the hand, materials, and tools. This work began with a focus on the use of digital fabrication tools applied to clothes-making processes, and while the use of these tools remained an important component, it expanded to inspire a broader approach to design thinking and making. As Loh, Burry, and Wagenfeld state, "Digital Fabrication has its own sense of authenticity, which is not related to the aura of the object, but to the integrated workflow as continuous designing" (204). It highlights the designer's opportunity to affect the end product through expanded knowledge of the tools, processes, and materials available and it resulted in a unified use of the hand, materials, and digital tools.

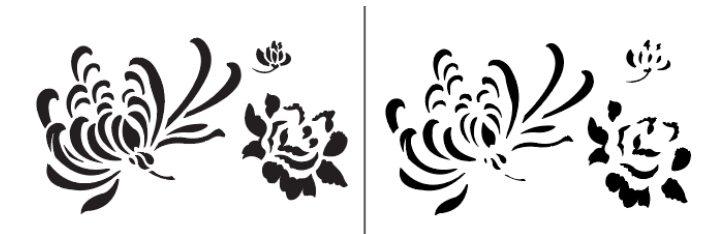


Figure 2: Comparing motif shape/line weight



Figure 3: Laser-cutting Layout

References

Loh, P., Burry, J., & Wagenfeld, M. (2016). Reconsidering Pye's theory of making through digital craft practice: A theoretical framework towards continuous designing. *Craft Research*, 7(2), 187–206. https://doi.org/10.1386/crre.7.2.187_1

McClendon, E., & Dennis, F. (2016). *Denim: Fashion's Frontier* (Illustrated ed.). Yale University Press.

