



Farm to fashion: Suri alpaca with spiral patternmaking

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Contextual review and concept statement

This design takes the Suri Alpaca fiber from the farm to fashion. The Alpaca, (*vicugna pacos*) is a camelid species originating from South America. Of the two breeds of Alpaca, the huacaya fiber is the most common. According to the Alpaca Owner's Association's member-only Alpaca Registry, Suri Alpaca, the focus of this scholarship, makes up about 20% of the registered alpacas in the US (personal conversation L. Vahlkamp, June 10, 2020). Suri has longer (Gurkan Unal & Atav, 2018), more lustrous fibers (Lupton & McColl, 2011) than huacaya, and when currently used for textiles is either found as a knitting yarn or woven and brushed resulting in a thick fabric used in interior design applications (Personal conversation with L. Vahlkamp, May 25, 2020).

The concept behind this entry began when the designer met a local Alpaca grower who is the only commercial buyer of Suri in the United States. This Alpaca grower developed a Suri fiber that addresses a gap in the Suri Alpaca research and marketplace: the first 80% Suri Alpaca woven fabric that can be used for apparel from North America. This Alpaca grower states,

The Suri grower community is extremely small - a few hundred farms. The average farm size is 35 animals of all different colors and qualities, so it would be very difficult to get enough Suri fiber together to run a batch and me not know about it. The US does not have the ability to comb Alpaca at any economical rate, so there has to be enough quantity to send to either China, Italy, or Peru. I'm the only person with that quantity Woven fabric blends of Suri Alpaca with merino or huacaya are common but no one currently in North America provides woven apparel-weight fabric with such a high percentage of Suri Alpaca (Personal conversation L. Vahlkamp, June 10, 2020)."

The second contextual description for this design focuses on spirals. Spirals have been engaged in clothing and textiles design scholarship from inspiring surface design (Hahn & Hahn, 2019,

Carrico, 2018, Overy, 2017), cutting techniques (Orhn-McDaniel, 2017, 2018, Orzada, 2018) and guiding weaving (Hongyoun Hahn, 2018). Indeed, the spiral shape has also been the unique purpose of making a garment (Moretz, 2018). The spiral application in this piece builds on our body of work by expanding the concept of draping by moving the muslin in a spiral motion around the body (Bernardoni & Ruppert-Stroescu, 2017).

Maintaining sustainable principles was important to both the designers and the grower, and together we established design priorities for the project: Within the luxury price point, make a runway piece that has some transformable element to encourage extended use, reflects a thoughtful design process grounded in the fabric itself, includes only natural colors and components, and integrates the Suri Alpaca locks (freshly sheared fibers) in some way.

Aesthetic properties and visual impact:

The formal aesthetic properties of this piece include line, volume, texture, and proportion. Shadow and light on the white jacket are elements of the visual impact, while the volume of the sleeves and pants join in the lower body to balance the distinct shoulders and collar detail. The natural Suri Alpaca is lustrous and rich. Textural effects highlighted on the white jacket through needle felting give a dimensionality to the nuances in the simple off-white double collar and on the removable collar that was felted with the alpaca locks in a manner evocative of the plaid. The sophisticated neutral color pallet is defined by the natural Suri. All angles of the garment give a distinct visual impact by incorporating pleats, folds and line to engage the viewer.

Process, technique, and execution

The design process began by examining the range of Suri alpaca fabrics provided by the local grower. Fabric weight, drape, and quantity available were considered. Fashion trends were researched, and a general direction along with a plain weave plaid and a twill weave ecru were defined in collaboration with the alpaca farmer. Sketches were developed, as was design experimentation with muslin on the dress form, respecting the principles of draping by moving the muslin in a spiral motion around the body (Figures 1 and 2). Our collaboration was entirely remote. We exchanged sketches and challenged each other to build on our separate ideas. We video conferenced while one of us draped, discussing tactics and details. A final design that had the most potential for runway appeal was agreed upon with the Alpaca grower. The draped patterns were transferred to paper and prototypes were constructed out of fabric similar in

weight and hand. A model fitting and analysis on the dress form prompted further refinement of the pattern. Pattern pieces for the facings and lining were developed. Felting experiments were conducted using a Baby Lock Embellisher and wet felting. When ready for cutting in the Suri Alpaca, the folded plaid was pinned at 10" intervals for matching. To avoid stretching of the bias, the cut garments were not moved until silk organza stays were hand basted to all of the seams. The facing and waistband were enforced by machine quilting two layers of silk organza and an interlining of silk organza was cut on the straight of grain and inserted at key bias regions on both garments to provide support. The pant is detached at the bottom seam to provide movement and to replicate the gentle curve of the sleeve seam. Machine felting finished edges and secured hems on the jacket and silk charmeuse lining coffee-dyed to match the fabric finished off the interior. Buttons were made by hand from Alpaca bone.

Significance, rationale, and contribution

This project contributes to the body of knowledge about using 80% Suri Alpaca woven fabric for apparel, and about draping with a spiral shape on the body. The Suri Alpaca used has unique characteristics. The yarns are so smooth that pins slide right out of the fabric. Unlike Merino wool, the fabric is quite resilient and does not mold or shrink quickly with steam. Dry felting worked beautifully, but wet felting with Suri Alpaca required the addition of Merino wool. The spiral pattern of both the pant and jacket minimized seaming (only 3 seams on the jacket and 4 on the pant) and maximized the body and flow of the fabric. Detailing with external pleats highlight the design lines. It is our hope that other designers will build on these discoveries to further the exploration of Suri Alpaca for apparel.

Originality and innovation

This is the first garment made from 80% Suri Alpaca, grown in the US and carded, spun, and woven in northern Italy. Its sustainable characteristics are that it is entirely biodegradable, composed of only natural materials in natural colors with no dyes or finishes. The garment looks complex, yet the patterns are quite simple with minimal seaming.

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Figure 1 Jacket drape and pattern



Figure 2: Pant drape and pattern





