

The Coffee-Infused Bones

Kailey Itri

Mentor: Ashley Rougeaux-Burnes, Texas Tech University
Keywords: conceptual/experimental, sustainability, couture techniques

Mentor Statement: The purpose of this mentorship relationship was to assist Apparel Design and Manufacturing seniors in exploring and attaining the high-level design and construction skills required to become successful professionals in the apparel industry. Each student in a studio-based class was challenged to design and construct a competition-worthy garment. The department encourages students to push their design skills beyond their previous experience and create engaging marketable designs. The student pushed themselves outside their previous experience by creating 3D-printed bone accessories. This design was chosen to be sponsored based on its high quality of construction and the exemplary problem-solving skills the student displayed throughout the design and construction process.

Statement of Purpose: The human body is intricately designed to endure, support, and serve as a vessel of strength for the human spirit. Our bones bear the weight of our physical existence, embodying a fortitude that forms the foundation of our resilience. Yet, it's during the early hours of the morning that our strength is at bay, and we are at our most weary. It's in the simple act of sipping a warm cup of coffee that we find a means to reawaken a sense of strength that drifted away in our sleep. This design, titled "The Coffee Infused Bones," invites you to savor the juxtaposition of strength and vulnerability in an elegant fusion that resonates with the senses. Combining the fortitude of 3D-printed bones with the delicacy of coffee-dyed knit and lace, we celebrate resilience in its rawest form—crafting a narrative where weakness and strength dance in unison.

Aesthetic Properties and Visual Impact: This halter-neck knit dress, made of 55% hemp, and 45% organic cotton, was ombre dyed with coffee to symbolize a warm sense of reinvigoration of the soul. The dress features a draped lace rib cage and an exposed back, alongside a 3D-printed free-falling backbone and arm cuffs. The silhouette is designed to mimic a tired, languid state, with exposed parts of the body emphasizing our raw vulnerability. Side cutouts emulate bone-like holes, while hand-cut lace mimics shards, creating a balance between natural curves and jagged forms.

Process, Technique, and Execution: This project was highly experimental, involving a meticulous process of material selection, sustainable dyeing, 3D printing, and garment

construction (see Figures 1, 2, and 3). I began by flat patterning the dress and perfecting the fit through muslin fittings. Organic knit and lace samples were dyed using different methods to test color retention beforehand, and recycled coffee grounds from Starbucks were used to adopt a sustainable and circular approach. According to the International Coffee Organization, the

average barista goes through 3-40 lbs. of whole-bean coffee per day (International Coffee Organization, 2022). With over 2.25 billion cups of coffee consumed each day, global production creates an excess of 23 million tons of waste per year, providing opportunities for sustainable and innovative utilization in the fashion industry (International Coffee Organization, 2023). After creating a coffee bath with the recycled grounds, espresso powder, vinegar, and boiling water, the fabrics were then left to soak in the bath, being gradually pulled out over the course of several hours to achieve a subtle ombre effect. After handwashing and air-drying the textiles, pattern pieces were laid out to ensure cohesive gradation. The knit base was constructed, and lace rib pieces were draped, cut, and hand-sewn onto the dress. The lace at the bottom half of the dress was sewn on by hand and carefully cut to ensure a natural gradation of knit to lace. The hem was also cut by hand to create a slightly unkempt, ragged appearance. Lastly, 3D-printed elements were edited via Tinkercad and printed with a polylactic acid base. Vertebrae pieces were hand-sanded, drilled, and assembled with jewelry pieces and lobster clasps to attach to a choker necklace and hook at the center back. Arm cuffs completed the design, creating a balance between the soft and bold aesthetic.



Figure 1: Coffee Dyeing



Figure 2: Hand-filing wire



Figure 3: Preparing drilled 3D vertebrae

Cohesion: The dress's components work together to create a unified aesthetic that celebrates the interplay of strength and vulnerability. The exposed skin and free-falling backbone piece are complemented by the draped lace ribcage, forming a cohesive visual and thematic narrative. The coffee-dyed materials tie the design together with a consistent

color palette and texture, enhancing the overall message of resilience and rejuvenation.

Originality and Innovation: This dress is a bold exploration of the intersection between fashion, art, and sustainability. By combining traditional textile techniques with cutting-edge 3D printing technology, it challenges conventional fashion norms and emphasizes a circular and sustainable approach in the fashion industry. The use of coffee as a natural dye not only reduces environmental impact but also imbues the garment with a unique, aromatic quality. This innovative approach highlights the potential for creativity to drive positive change in the industry.

Conclusion: Through thoughtful design and experimental techniques, this piece invites wearers to embrace the delicate balance between strength and fragility. It is a testament to the power of innovative fashion to inspire a deeper connection with both the materials and the emotions they evoke, fostering a renewed commitment to environmental stewardship and a deeper appreciation for the intricate dance between resilience and vulnerability. By intertwining elements of solidity and delicacy, this collection invites reflection on the complexities of strength, fragility, and the enduring spirit that binds them together in a narrative of empowerment and grace.

References

- International Coffee Organization. (2022). Global coffee market: Statistics & facts. International Coffee Organization. <https://www.ico.org/>
- International Coffee Organization. (2023). Coffee waste and sustainability. International Coffee Organization. <https://www.ico.org/documents/cy2023-24/ed-2404e-coffee-waste-and-sustainability.pdf>
- National Coffee Association USA. (2023). Coffee industry and environmental impact. National Coffee Association USA. <https://www.ncausa.org/Industry-Resources/Environmental-Impact-of-Coffee>
- Statista. (2022). Global coffee market - Statistics & facts. Statista. <https://www.statista.com/topics/839/coffee-market/>

