



A New Era of Costume Inheritance: *Historical Reconstruction of 1920's Garments*

Belinda T. Orzada, Dilia López-Gydosh and Kelly Cobb, University of Delaware & Jie Diao,
Beijing Institute of Fashion Technology

Keywords: museum exhibition, 3D virtual design, 1920s, fashion history

“Museum exhibits transform scholarship from a private act to a public experience” (Marketti et al., 2011, p. 249). “Digitization holds tremendous promise for both collections and researchers through greater access and interaction” (Sauro, 2009, p. 1941). Exhibition of 3D virtual garments, alongside historical ones mesh historical and virtual dress curation. Several scholars (Liu & Suh, 2022, Martin et al., 2019; Meier et al., 2021) have reported work in this area, including recreation of an 1890s bodice and skirt using Optitex 3D (Tortorice et al., (2015).


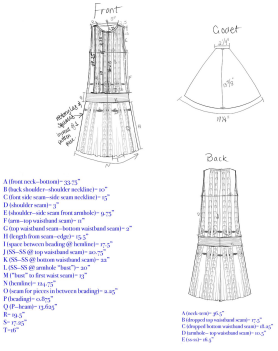
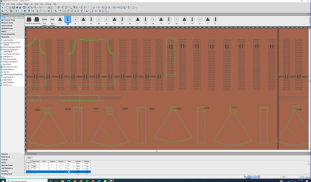

To support a university-wide 1920s commemoration, an exhibition highlighting 1920s dresses in our fashion history collection will explore how the simplicity of the chemise silhouette becomes a blank canvas to communicate the 1920s *zeitgeist* (Nystrom, 1928). Digital replication allows an exhibition to reach a broader audience and is also not limited by the physical exhibition space and calendar. Our goal is to replicate as many 1920s dresses from the Collection as possible and develop micro videos which will contribute to the educational materials available during the exhibition and online. The development of digital replicas requires many contributors. This paper documents our process to digitally replicate these dresses as a learning opportunity for undergraduate students, and shares a unique, international collaboration.

Page 1 of 4

Our international team of US and Chinese fashion scholars and students from two institutions collaborated to develop digital *twins of garments* too fragile to be displayed on mannequins. Digitally reconstructing fragile garments allows viewers to experience the drape, silhouette, textile details on the body and in movement, something that garments exhibited on a mannequin or laid flat are unable to do. The team communicated via social platforms (Zoom, WeChat) to collectively research western women's dress of the 1920s.

More than 50 circa 1920s dresses were identified. Front, back and design details of each garment were photographed. US students (on site) measured the garments and drew flat sketches which included measurement details. Social media allowed discussion of work in-progress; faculty advised students on their replica designs. US and Chinese (working internationally) students worked over the summer using academically available design software (in China, CLO3D; in the US, Optitex) to digitally draft 2D patterns based on dress measurements. Avatars were adapted based on garment measurements and historic research into sizing of the era. Refinement of pattern shapes and fitting on the avatar was an iterative process. Often additional measurements were needed to solve pattern shape and fit issues. Surface texture maps developed in Adobe Illustrator were applied to the 2D patterns. Pattern pieces were joined and placed on the avatar in a replica of the actual garment.

Faculty and students from both institutions will continue to contribute design work for the exhibition scheduled Spring 2026. Images of 1980.367, a peach silk chiffon dress with beaded art deco design provide an example of a completed replica.

	 <p>1180_367_Front_20240330_0104_V004_0001.dwg SP_2_V1</p> <p>Front Coat Back</p> <p> A:front neck width=12.5" B:back shoulder width=16.5" C:front waist width=16.5" D:back waist width=16.5" E:shoulder width from centerline=12.5" F:front armhole width=12" G:front waistband width=12" H:front bodice length=16.5" I:front bodice length from waist=16.5" J:back bodice length from waist=16.5" K:back bodice length from waist=16.5" L:back bodice length from waist=16.5" M:front skirt length=12" N:back skirt length=12" O:front skirt length from waist=12" P:back skirt length from waist=12" Q:front skirt width=12" R:back skirt width=12" S:skirt length=12" T:skirt width=12" </p>		
<p>Figure 1. Photo of dress FTC1980.367. Gift of Daria DiSabatino.</p>	<p>Figure 2. Flat sketches and measurements of garment.</p>	<p>Figure 3. Patterns and fabric with beading texture applied in Optitex.</p>	<p>Figure 4. Completed 3D dress on Optitex avatar.</p>

References

Liu, X. & Suh, C. (2022). Development of Rushan (襦衫) and Qun (裙) Patterns for Traditional Chinese Wedding Dresses Using a Virtual Fitting Program. *한국의류학회지 = Journal of the Korean Society of Clothing and Textiles*, 46(2), 250–71.

Marcketti, S., Fitzpatrick, J., Keist, C. & Kadolph, S. (2011). University historic clothing museums and collections: Practices and strategies. *Clothing and Textiles Research Journal*, 29(3), 248–62.

Martin, K. & Mauriello, D. (2013). 3D simulation: A new embodiment for historic fashion. *CULTURECOMPUTING '13: Proceedings of the 2013 International Conference on Culture and Computing*, pp, 62-67. Washington, DC: IEEE Computer Society.
<https://doi.org/10.1109/CultureComputing.2013.19>

Meier, C., Berriel, I. S., & Nava, F. P. (2021). Creation of a virtual museum for the dissemination of 3d models of historical clothing. *Sustainability* 13(22), 12581. <https://doi.org/10.3390/su132212581>.

Nystrom, P. H. (1928). *Economics of Fashion*. New York: Ronald Press Company.

Proppe, R. (2016). Selling the Art Deco Lifestyle: The Distinction of the Modern Woman in 1920s Fashion Illustration. *Academia* 6.

Sauro, C. (2009). Digitized historic costume collections: Inspiring the future while preserving the past. *Journal of the American Society for Information Science and Technology*, 60(9), 1939–41.

Tortorice, C., Cobb, K., & López-Gydosh, D. (2015). Exploring the Application of Virtual Design Software in Historic Costume and Textiles Collections. Poster presented at the 41st Costume Society of America Annual Meeting and Symposium, San Antonio, TX, 27-30 May 2015. <https://costumesocietyamerica.com/publications/csa-abstracts/>