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The new costume designer:

An exploration of digital and physical technologies for costume development in the film industry.

An exegesis presented in partial fulfillment of the
requirements for the degree of Master of Design

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Abstract

Three-dimensional (3D) simulation software is utilised for digital visualization of garment design, pattern development, drape, and fit on virtual models and avatars within the costume and fashion industries. This practice-led project explores the use of digital design technologies for costumes created in a digital space and asks “How do current digital and physical technologies work as integrated practice within the industry of costume design for film?” From a fashion perspective, many researchers have looked into how historical costumes can be reproduced as accurate 3D models or how 3D modelling software can be used for prototyping and fit for production efficiency. However, there is little published academic research discussing the use of digital technologies by costume designers for physical costume design and development in the film industry. Initial research for this project included interviews with experts from physical costume design departments in the film industry to gain insight as to the extent and relevance of collaborative work experiences using both physical and digital processes, systems and technologies within their practice.

Through an original creative project using an iterative design process, this research project focuses on the generation of physical costume concepts for a fantasy creature. These costumes are designed to tailor to the exaggerated humanoid body of the “koloss” character from Brandon Sanderson’s *Mistborn: Era 1* series as he morphs from a child to an adult. This project explores how patternmaking and 3D cloth simulation software can be applied to costume generation that navigates the physical and virtual world. Digital and physical visual, patternmaking, and sampling tools are utilised with tacit knowledge of an experienced technical fashion designer to explore how physical costume designers can feel empowered in the creative process when working between physical and digital departments.

Keywords: digital technologies, costume design, fantasy, patternmaking, 3D simulation, Computer Aided Design (CAD), digital workspace, computer-generated imagery (CGI).

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