

TEXTILE + DESIGN LAB

Case Study Number: 03/2017

Project Title: Kinetic Cortex

Research Team: Colin Anderson, Luis Alonso Sandoval Gomez and Logan Van Riel (Year 2 Bachelor of Creative Technologies Students)

Project Period: March 2017 – June 2017

Project Description:

Kinetic Cortex is a student project created in response to the Bachelor of Creative Technologies paper 'digital skins'. The brief centred upon post-human performance, with the option for the final projects to be entered into the World of Wearable Arts (2017). The project responded to the brief through producing a UV responsive knitted garment using Shima Seiki knitting technology at the AUT Textile and Design Lab (TDL).

The aim of the project was to play with the concept of movement and performance through the act of revealing and concealing. Connections between movement, breathing and the mind were exposed to form a kinetic expression of identity, revealed by the wearer of the knitted UV garment. These 'kinetic' connections presented an alternative way to identify the individual through the body.

"Kinetic Cortex was designed to highlight the beauty and intricacy of movement and thought by creating a theatrical UV garment for performance. It reveals that one user is indistinguishable to the next by

body type or gender while wearing the garment. The audience identify the wearer by the patterns and subtleties of their movement.”¹

Background:

‘Kinetic Cortex’ is a collaborative project created by students in their second year of completing a Bachelor’s degree in Creative Technologies at the Auckland University of Technology. The decision to incorporate knitwear into the project and approach the TDL came from personal interests around improving and incorporating seamless attachments into wearable technologies and garment design.

Process:

The initial stages of the project involved looking into the relationship between the mind and the movement of the body through modified (low tech) EEG technology (Electroencephalography). This technology allows electric pulses in the brain to be measured, in response to stimuli. The project moved away from this technology towards a performance orientated outcome but retained some of the initial concepts that drove this developmental stage.

Creation of the UV knitted garment at the TDL began with the iterative development of tubular knitted tassels that would be attached to the knitted skin. The three dimensional structure of the tassels, which ranged between 5 cm and 20 cm in length, were formed using Pemotex yarn, which hardened when subjected to heat and/or steam. Coloured UV yarn, which emits a glow when exposed to an external light source, was knitted with the Pemotex tassels to imitate a coloured gradient. This allowed for the colours within the garment to appear as moving tonal parts during performance. The skin, or

¹ Luis Alonso Sandoval Gomez and Logan Van Riel Colin Anderson, "Kinetic Cortex," accessed 18 December 2017. <http://www.kineticcortex.com>.

undergarment to which the tassels were attached, was knitted using seamless knitting technology with merino wool and Lycra yarns, for comfort and stretch. A lace pattern was incorporated into the knitted structure of the undergarment, to enable the tassels to be manually attached.

The expertise of the lab's Senior Technician, Gordon Fraser, was important and highly valuable during this stage of the project. Gordon provided an invaluable source of knowledge in regards to technical skill, materials and yarn sourcing, which the team members acknowledged as critical to the project's success while learning to work with new technologies.

Project Outcomes:

The final garment was presented through video performance and its movement was filmed while being worn at the JUMP Trampoline Park under external spotlights. The decision not to exhibit at WOW was made due to time constraints, but will be re-considered for the future. The video of the garment in action was exhibited in the end of year open studio featuring the work of Creative Technologies students. To see the video and other documentation of the project, please follow the link below under Publications.

Further development of the project in regards to knitting technology and wearable electronics will investigate the implementation of an internal light source through the use of fibre optics. Playing with the form of the garment would also be considered in regards to the concept of revealing and concealing movement.

Publications:

Website: <http://www.kineticcortex.com/>

Video: <https://www.youtube.com/watch?v=glh-ANjLgY>

References:

Colin Anderson, Luis Alonso Sandoval Gomez and Logan Van Riel. "Kinetic Cortex." Last modified 2017. Accessed 18 December 2017. <http://www.kineticcortex.com>.

Images:



Knitted UV responsive tassels prior to assembly



Still image of the final garment filmed at the Jump Trampoline Park