

Techstyle for Social Good International Competition 2019
List of winners and the winning project descriptions

Prize: Techstyle Grand Prize

Winner: Amy Yu Chen and Claudia Poh, USA

Title of project: Cair Collective

The Cair Collective dressing system provides an automatic dressing experience that goes beyond a single user. Remove your assumptions around current systems of dressing and instead, consider the possibility of using air as a means of getting dressed. Using air in inflatable components that are installed in a garment causes the clothing item to rise. This allows the garment to work against gravity for an automatic dressing experience.

This might seem bizarre in fashion; however, in other fields, there have been the emergence and acceptance of self-driving cars, artificial intelligence, and virtual assistants like Alexa. Cair Collective is the first step towards new possibilities in the fashion world. What if our clothes can do more for us and our body?

Cair Collective's first co-designing experience is with Christina Mallon. Christina has paralysis in her arms but taught herself to use her feet as her hands for the last eight years. We have prototyped and designed a series of five looks that Christina is independently able to don and doff without asking for help from others.

The process of designing universally allows us to cater to those who have been marginalised by the industry. The innovativeness and convenience can also contribute to new ways of dressing for everyone. Cair Collective believes in a fashion future that is human-centric, in which health elements are incorporated into design processes.

Prize: Techstyle Special Prize

Winner: Hunmin Koh, USA

Title of project: The Hands Free Mouse

The Hands-free Mouse is a wireless mouse designed for pedal input. People who have an arm disability are challenged with the majority of computer interfaces that have been developed with hand dexterity in mind. Thanks to modern technology, such as voice input and touch screens, the barriers to using electronics have been reduced, but for precision control that is required for some of the computer applications, it is difficult to surpass the flexibility of the good old mouse and cursor. While there are existing assistive devices that are designed for non-dexterity, the users may at times feel uncomfortable with their

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use because they are expensive, require a special setup, or draw too much attention to the user.

Most of the currently available types of foot-controlled mice have a separate input apparatus for clicking and positioning. This is because the leg muscles are not as sophisticated as the hand muscles. Therefore it is easy for the user to accidentally click the mouse when moving the cursor. When the foot is partially on the mouse, the heel which is in contact with the ground creates excessive traction force and prevents the cursor from moving smoothly. In order to solve this problem, the device must support the entire foot to reduce the traction forces and withstand the pressure of the leg in its relaxed state at the same time. With a relatively simple modification to an existing wireless mouse, the Hands-free Mouse is a straightforward and affordable type of assistive computer hardware.

Prize: Sustainability Grand Prize

Winner: Christine Lew and Florian Wegenast, United Kingdom

Title of project: Heritage Craft Innovation

Florian and Christine are collaborating to combine materiality, craftsmanship, and sustainability. They would like to continue their design investigation on the materiality of local waste in Hong Kong through the Competition whilst supporting local craftsmanship. In continuing their exploration of waste glass and stone, they will extend their waste upcycling research to include waste textile fibres. Through these different materials, they will further explore the craft processes, while collaborating with local bars to obtain waste glass, a stone factory in China, textile factories, and local craftspeople, such as metal workers, glass artists and rope makers. Rope making is also a traditional craft in Hong Kong with maritime roots.

By exploring the materiality of waste, Florian and Christine would like to introduce these new upcycled materials to local craftspeople and extend the conversation of upcycling to more creative practitioners. The studio's belief is that their continuation of waste material research and collaboration in the crafts will help to address the city's waste issue, while supporting and bringing awareness to dying crafts that are native to Hong Kong.

Prize: Sustainability Special Prize

Winner: Naila Al-Thani, United Kingdom

Title of project: SEAM UNSEAM

In response to today's fashion that quickly transforms into tomorrow's waste in the fast-paced, short-lived linear cycle of consumption, SEAM UNSEAM is a design project that

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investigates garment longevity and sustainability through the use of alternative construction methods.

It has been estimated that over 85,000 garbage trucks of textiles end up in landfills daily, 1.7 billion items of clothing go unused in the UK alone, and some items may even be discarded after only several wears. Yet just three times longer use of clothing is the equivalent to a carbon footprint reduction of 65% and water usage reduction of 66%.

By assembling a garment with the use of a reversible biosynthetic protein strip in place of sewing with threads, not only will the construction time be reduced, but the contribution to environmental damage from the use of harmful dyes and chemicals for the threads is eliminated. The current recycling method is a process in which the seams are usually cut from the garment before the garment is shredded, which degrades the fibres. However, with the use of disassembly, the garment can be reverted back to flat textile pieces for return and reuse.

The Ellen MacArthur Foundation has reported that a circular economy in the textiles industry can be realised with actual garment utilisation which includes emotional durability; that is, when a wearer greatly values a garment because s/he sewed the item him/herself. One of the more effective ways of eliciting emotional durability is through a tailored fit, personalisation, and flexible design.

As the biosynthetic protein strip can be detached and re-attached when needed, and leaves no marks or damage on the fabric, garments can be quickly and easily repaired, altered, or transformed. Creating a more efficient system for disassembly and re-use can extend the life of a garment, as well as challenge the concept that there are limitations to design in order to produce responsible or sustainable clothes.

Prize: Hong Kong Best Design Award

Winner: Wendy Law, Hong Kong

Title of project: Aesthesis - The partial hand accessories for amputees

Most amputees are invisible in society and lack sufficient support. While the market continues to improve on upper and lower limb prosthetics and provide amputees with more functioning upper limbs, a large number of hand/finger amputees are hardly able to secure an appropriate prosthetic that would improve their quality of life and self-esteem.

Hand/finger amputees usually have to customise a glove-like hand prosthesis which is not only stuffy and heavy but also expensive. Many do not even want to wear a silicone prosthesis at all because of the physical discomfort. These thumb prostheses are only for “aesthetics” because they provide a realistic appearance to the hand without allowing

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controlled finger movement. The 3D-printed prostheses are a less costly option, but the mechanical structure dominates the design, making the prostheses less visually pleasing.

The ultimate goal of Aesthesis is to allow thumb amputees to regain autonomy over life, be it self-care ability or their social and family lives, as well as empower them to have self-confidence and self-appreciation. Aesthesis also aims to create a barrier-free environment.

Aesthesis is a 3D-printed functional aesthetic device on the hand for people who have lost their thumbs. Our finger prosthetic for amputees is a combination of a mechanically active prosthesis and a passive accessory, which is meant to substitute the missing thumbs and enhance the quality of life of hand amputees. In the longer run, Aesthesis strives to provide this customised service at a lower price with greater visual attractiveness.
