

EXPLORING COBOT TECHNOLOGIES AND AGILE TOOLING TO AID CREATIVE GARMENT MAKING AND IMPROVE ETHICS IN CLOTHING MANUFACTURE

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Engineering innovation in the fashion sector has come from high volume, low-value production, where repetitive and highly automated tasks are undertaken by machines with minders/operators ‘feeding’ textiles and components to the machine. From a human perspective this work, whilst a long way from the image of manufacturing still held by the public as largely handmade, is very rapid, repetitive, and dull. The deskilling of the workforce is clear. Many labour practices in the garment industry in the UK verge on modern day slavery with workers underpaid and exploited in dangerous conditions. Internationally the situation can be much worse.

Design skills risk becoming redundant in the drive to make unsustainably large volumes of clothing. Fully automated systems can be seen to be driving the simplicity of garment shape and construction and data-driven high-volume production means manufacturers are happy to supply consumers with more of what they already own rather than risk new styles. Economies of scale will eventually mean fewer choices for consumers in this scenario. Conversely, the development of disruptive technologies like 3D weave and knit for micro-production and zero waste manufacture can mean close cooperation between designers, engineers, yarn producers, textile technologists and consumers and could revolutionise garment production and on-demand manufacturing. New, small scale, agile tools that are needed to support and facilitate a new, more ethical culture in garment manufacturing that focuses on upskilling workforces. Designing new cobot technologies will support the ambition for more meaningful and satisfying work whilst helping to solve the sustainability issues of over production.