Digital Fashion, Mass Customization and Direct 3D Manufacturing

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The uptake of 3D technologies into the fashion and apparel industries, from bodyscanning and visualisation, to virtual prototyping and seamless 3D fabrication, has the potential to take the established made-to-measure model to a level of mass-customisation which would allow a majority of consumers access to individualised products tailored to fit their bodies and their needs.

This paper presents the background, motivation and current research practice in customised sports footwear as an example that demonstrates the convergence of materials science, engineering, computer science and design. It outlines the motivation and risks in the development of a new design and manufacturing paradigm based entirely in 3D, and gives a vision for the future of design practice that utilises evolutionary design and e-Manufacturing, with potential for a wide range of fashion and apparel applications.