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FACE SCANNING FOR 3D VISUALIZATION PROJECTS AT LIVERPOOL SCHOOL OF ART AND DESIGN

Safe to use | High resolution | Time saver

Liverpool-based Face Lab uses Artec 3D scanning technology for forensic and archaeological research, installation art, and a new post-graduate program MA Art in Science.

Face Lab is a research group based at Liverpool School of Art and Design, Liverpool John Moores University. Using 3D scanning and other state-of-the-art technology, Face Lab carries out craniofacial analysis, which identifies unknown bodies in forensic investigation, or historical figures for archaeological depiction. The research is conducted at a highly specialized lab, which is equipped with the latest technology including 3D scanners and 3D printers.

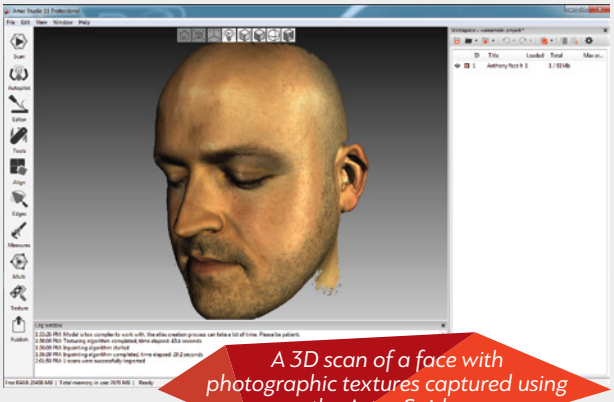
Adding Artec Spider to the Face Lab toolkit

Face Lab approached Patrick Thorn & Co., Artec's UK Gold Partner to purchase an Artec Spider high accuracy 3D scanner along with an Artec battery pack to replace their outdated handheld 3D scanner that had a poorer resolution and did not capture color.

The ability to capture color was very appealing to the Face Lab team and seen as highly beneficial for their research into facial animation. Face Lab is also creating a database of 3D faces and facial features such as ears, with photographic textures that can be used to add realistic skin to 3D archaeological depictions.

Artec Spider allows for quick and accurate scanning of human skulls, which were difficult to 3D scan before.

This capability is integral to Face Lab's 3D workflow when producing facial depictions of people from the past.



A 3D scan of a face with photographic textures captured using the Artec Spider

Reconstructing the face of Robert the Bruce, King of Scots

The team's most recent facial depiction of Robert the Bruce, King of Scots from 1306 to 1329 began by 3D scanning one of the few casts of Robert's skul. This was the first step in order to start the 3D facial reconstruction process, using the haptic sculpting system utilized by the Face Lab team. The images of Robert the Bruce gained international publicity when released in December 2016 and featured in a BBC Alba documentary titled 'Ceann an Righ.'

King Robert the Bruce: The stages of facial depiction. Image courtesy of Face Lab LJMU and University of Glasgow.

Face Lab's Artec Spider has now traveled across Europe and the UK to scan human remains. Its portability has allowed Face Lab to scan human remains in situ and within restricted museum collections. Some of the final facial depictions that began with a 3D scan from Spider can now be found in Bryggens Museum in Norway, Buxton Museum and Trinity College Dublin.

Scanning for installation art

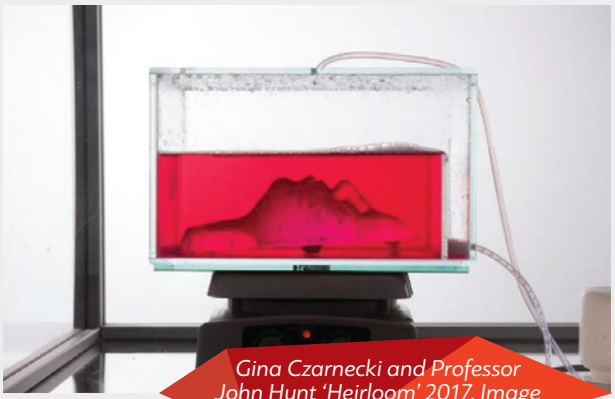
Face Lab worked with bio-artist Gina Czarnecki and Professor John Hunt in 2015 through their 'Heirloom' project, which has since been exhibited around the world. Using Artec Spider, Face Lab 3D scanned the faces of Gina's daughters with the artist's intention to 3D print the faces in bio-glass and then to create 3D living portraits of the two daughters by growing cells collected from inside their mouths on the delicate.

In 2016 Face Lab collaborated with Turner prize nominees, Jane and Louise Wilson on their 'Undead Sun: We Put the World before You' exhibition at MIMA (Middlesbrough Institute of Modern Art). Face Lab scanned the artists' faces (Jane and Louise happen to be identical twins) and using this 3D data, produced animations of their faces morphing into each other, leading to the creation of the average Jane/Louise face. This footage was included in their installation, alongside a 3D print of the generated average face, which was disfigured with wounds symbolizing those inflicted on soldiers from WWI.

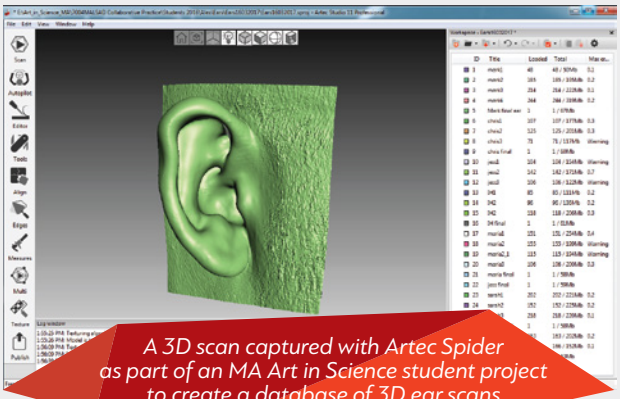
Starting MA Art in Science postgraduate program at Liverpool School of Art and Design

Caroline Wilkinson, Mark Roughley and Kathryn Smith from the Face Lab team established a taught postgraduate program in 2016 at Liverpool School of Art and Design, titled MA Art in Science. As part of the program, students are exposed to 3D practices in Face Lab and undergo training sessions with Artec Spider and software. Currently, two students are completing research projects utilizing the Artec solution.

"We have had upgrades to the Artec Studio software that have made the whole scan to finished model so easy to do. The update that includes the Autopilot feature simplifies the processing even further – essential with students and all types of users," says Mark.



Gina Czarnecki and Professor John Hunt 'Heirloom' 2017. Image courtesy of FACT



A 3D scan captured with Artec Spider as part of an MA Art in Science student project to create a database of 3D ear scans