MAKING CNC-CARVED WOODEN STATUES OF HISTORICAL SWISS PERSONALITIES

High accuracy   Precision   Time saver

Carving the bust of Alfred Escher on a CNC milling machine

The Swiss #WOODVETIA project promotes the use of wood by presenting wooden statues to the public, which were made with the help of Artec Eva 3D scanner and Artec Studio software.

The Schweizerholz (Swiss wood) initiative and the Swiss Federal Office for the Environment have launched the #WOODVETIA campaign to raise awareness of advantages of using wood, a biodegradable and eco-friendly material, in construction and furniture production. The motto of the campaign is: "Smelling wood, feeling wood and experiencing wood." Quite unusually, this campaign does not rely on traditional advertising methods such as posters or TV commercials. Instead, figurative artist Inigo Gheyselinck has created wooden figures of famous Swiss people to make history come alive and show what a great material wood is. The artist used different types of wood for different personalities; each figure was made from a tree species typical for the region in which the respective personality lived or worked.

Some of the wood types are softer and easier to handle than others. For example, Winterlinde (winter linden, or small-leaved lime tree), a classic species of wood, is quite easy to work with and is particularly appreciated by carvers. Its bright colors highlight the contours and shadows of the figures. Oak, on the other hand, is a hard material, especially for milling on a CNC machine, and therefore it was less suitable for the #WOODVETIA project. Nevertheless, the figure of the Swiss politician and railway pioneer Alfred Escher (1819—1882) was made of a 150-year-old stile, since the railway was historically laid on oak ties.

In addition to Alfred Escher, Gheyselinck has created spectacular wooden figures of other prominent Swiss, including painter Giovanni Segantini, architect Lux Guyer, writer Johanna Spyri, engineer and adventurer Auguste Piccard, as well as the wax-maker Marie Tussaud, the founder of the Madame Tussauds wax museum. The figures go on display at dedicated events across Switzerland. Their current locations are available on the project's website.

For sculpting the bodies, Gheyselinck found models with a physique similar to the person he wanted to portray. For modeling the heads, the artist used clay. Artec Eva structured light 3D scanner was used for creating both data sets.

Eva provided the required quality of scans, which was particularly important for rendering small details. The scanner also has a high 3D capture rate: Scanning a body in 3D took only 15 minutes to complete.

This work was done by Artec's Certified Partner 3D-MODEL AG. Gheyselinck was able to see 3D models being built on the computer screen during the scanning process. These fast previews were especially helpful for the accurate digitization of body parts.

"For me as an academically trained artist, working with up-to-date 3D technology is an exciting project," says Gheyselinck. "It is fascinating to see what modern technology is capable of."

The head and body scans were fused using Autopilot mode in Artec Studio 11 3D scan software, and then they were converted from a point cloud to the standard STL format, which was turned into a solid 3D model in third-party software. Each solid 3D model was sent to a CAD-compatible CNC milling machine, which produced wooden figures three days later. The milling machine processes material using drill heads, carving a programmed shape from a large rectangular wooden block. With some types of wood, the resulting shapes turned out to be a bit too crude and not precise enough so the artist had to touch up certain areas, in particular faces and areas around eyes.

"Old craft meets modernity: The lifelike and realistic wooden statues of important Swiss personalities show what can be achieved with wood and with the help of new techniques," says Christiane Fimpel, member of the Executive Board of 3D-MODEL AG. "With the Artec scanners we were able to make a useful contribution to the creative process of the #WOODVETIA project."

People who see the detailed and realistically looking wooden figures seem to be amazed. "I didn't know that something like this is possible with wood," many say.

This attests to the efficacy of the campaign: The life-size wooden figures of Swiss personalities do a great job showing what is possible to achieve with wood, especially when 3D technologies are used.

Scanning a clay bust of the painter Giovanni Segantini with Artec Eva

The statue of Giovanni Segantini in the Bernese Alps

Artec 3D

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