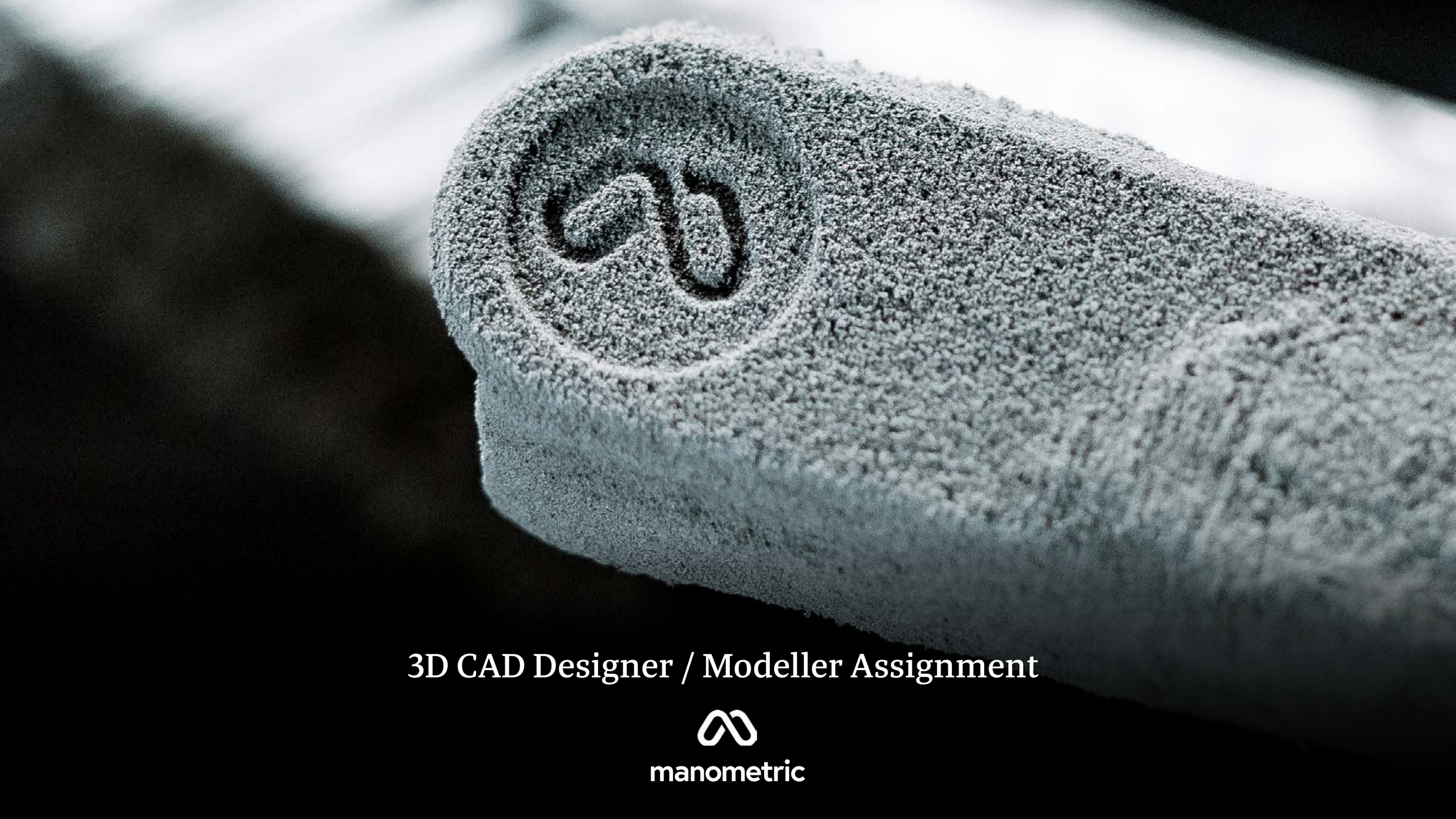


3D CAD Designer / Modeller Assignment

manometric

The assignment:

Attached with this file is a 3D model (scan) of a hand. The aim of the assignment is to try to model a simple, but nice looking brace around a hand scan, using surface modelling. You can import this model into any CAD software that you like to make the brace.

In developing models for testing, we primarily use Fusion360. It is free to download for students. MeshMixer is also free to download and use for all. These are good starting points, but not specifically required.

Please make some screenshots during the process and document this visually. I am curious about your approach to the project, why you designed the brace as you did, and what you considered during modelling to ensure comfort, durability, and aesthetics. It's very interesting to us how you approached it. See if you can come up with an interesting design, not just one of our braces.

Good luck, and please reach out if you have questions.

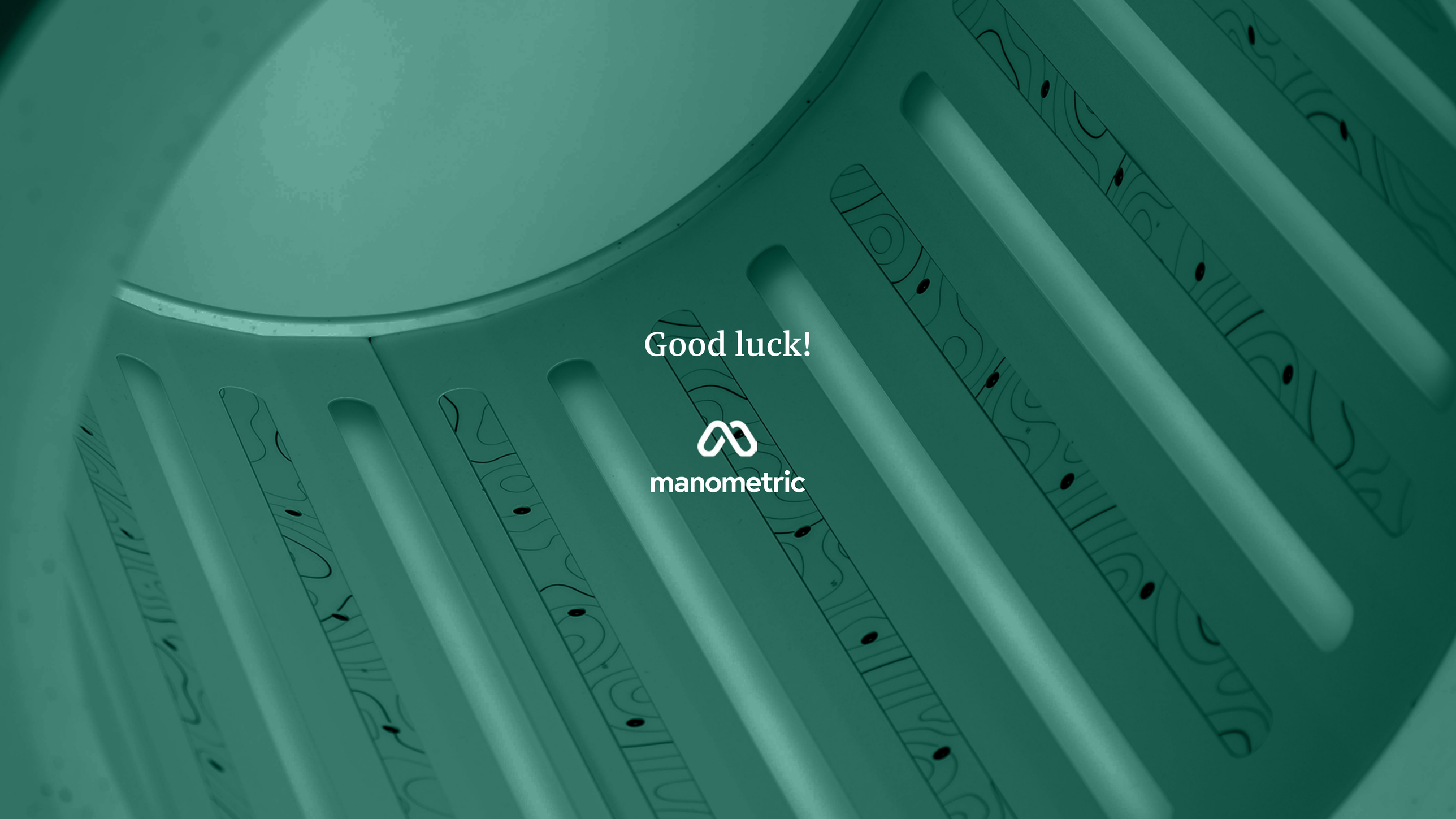
Fusion360

Fusion 360 has multiple ‘workspaces’ that you can switch into. Each of these workspaces has its own features which are applicable to certain model-types. Especially interesting in Fusion is the use of the Form workspace. This works with T-spline-surfaces (NURBS). The solid workspace is most compatible with Solidworks/CREO. The scan of the hand can be imported through Mesh, then you use Form to place an existing surface on the model. With the feature ‘Edit Form’ you can place each vertex (point) on the surface of the hand, till a smooth, fitting surface is made. With ‘thicken’ you are already quite close to a complete brace. After this step, the produced volume should be converted to ‘Solid’. You can find more info about Fusion here. Side note which can save some time: Form is only available if you have “capture history” turned off.

MeshMixer

In Meshmixer, you can also import the scan and make a brace. Here is a similar workflow applied to an AFO. https://bit.ly/47fqJya.

Can you explore further than this process details?


Good luck!
manometric