



EPHEMER(E)ALITY CAPTURE

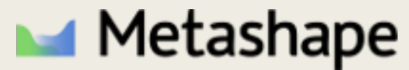
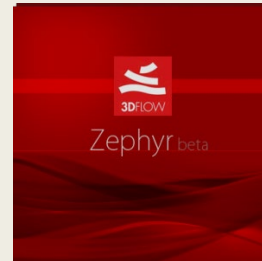
Hackers&Designers Summer Academy 2020

What you need...

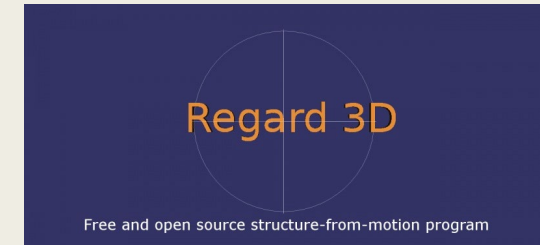
- A smart phone/camera.
- A Photogrammetry app (examples below)
- Objects to scan – some simple (cup, teddy, a person!), some complex (plants, glass)
- Objects to disrupt photogrammetry – anything reflective, transparent, shiny, complex/detailed
 - *Examples: mirrors, glasses (with/without water in) LEDs, foil, hologrammatic wrap, flashlight, plants (with lots of leaves), patterned repetitive carpets, minimal objects (plain walls, curtains) etc.*

Install a Photogrammetry app

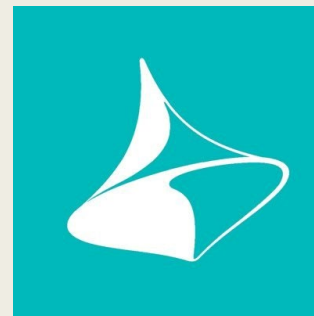
Desktop software



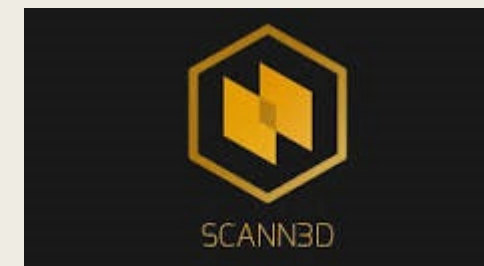
Open-source



Mobile Apps



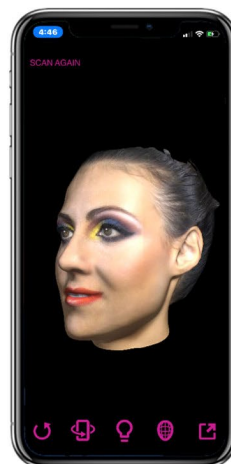
TRNIO



For Android



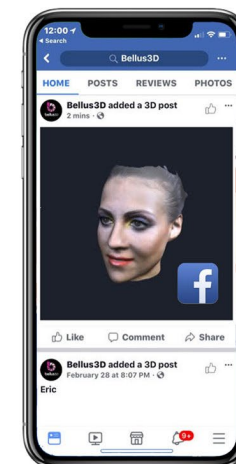
Bellus3D FaceApp
Start Scanning



Bellus3D FaceApp
View in 3D



Bellus3D FaceApp
Toggle Color



Bellus3D FaceApp
Export to Facebook

Have you seen/experienced a 3D scan before?

- App
- VR
- AR





WHAT IS KINDS OF 3D SCANNING ARE THERE?

How is Photogrammetry made?

How to shoot your photographs:



Shoot a loop of about 20 sequential photographs in small increments about your subject.

Tip!: For best results, add newspaper or sticky notes around your subject.

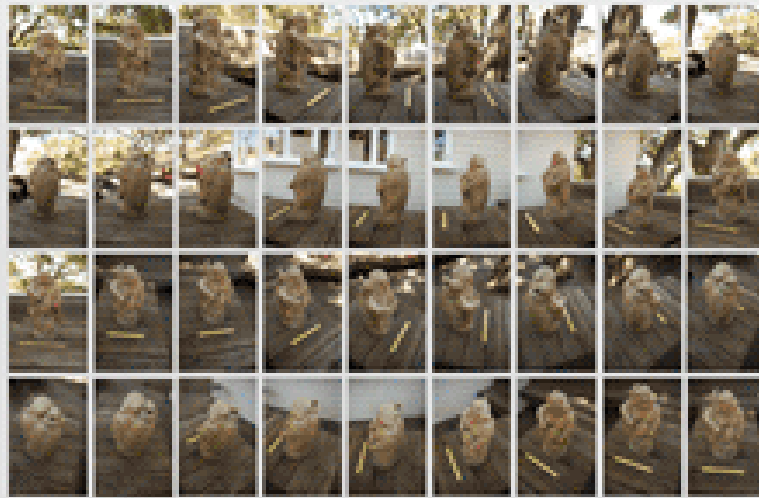
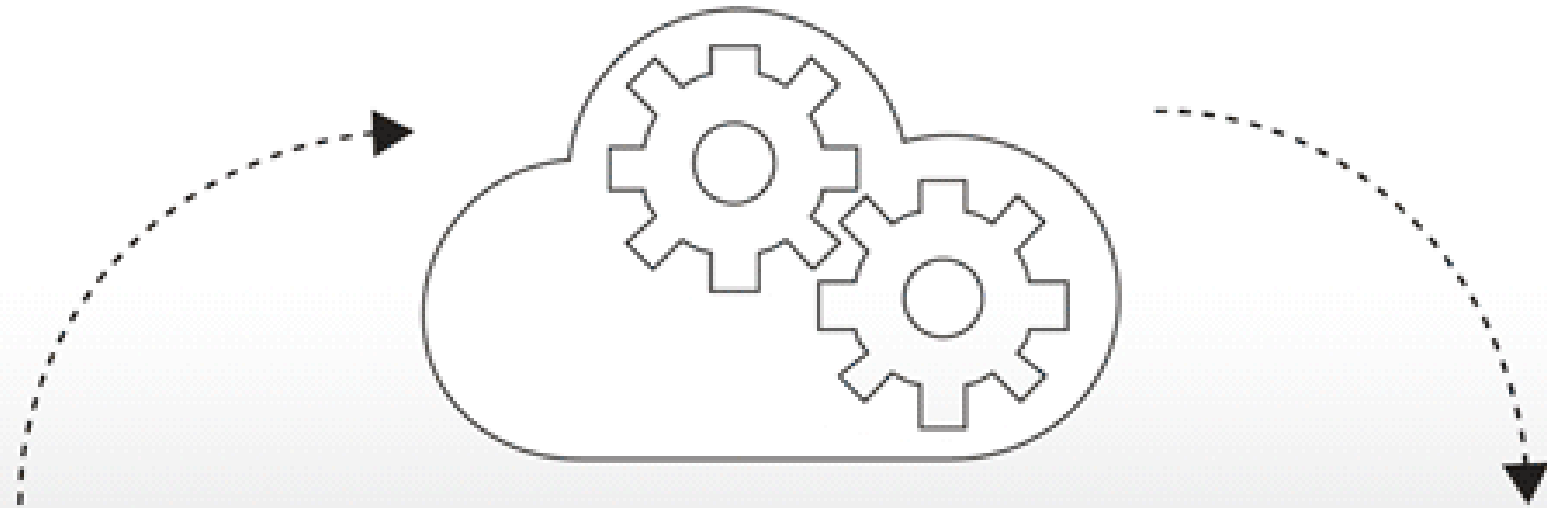


We will use these to guide us on create glitches!



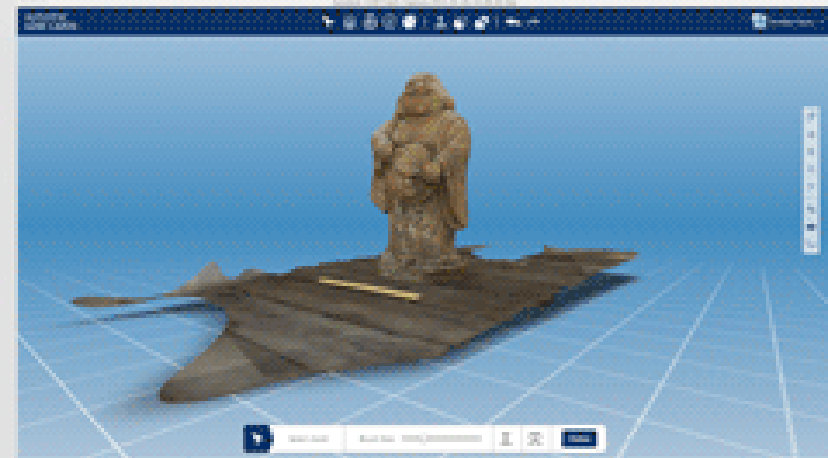
- *Do not move your subject when taking the photographs!
- *If you are capturing a person they must NOT move!
- *Plain, reflective, or transparent surfaces or objects will not work.

Upload your photos to the cloud to create your 3D model.



Frame and focus on the whole subject as you shoot...

Your 3D model will be saved to your cloud storage space.



GLITCHING THE ALGORITHM

- Photogrammetry works due to a algorithmic reading of images in order to determine key markers in space (cloud points) which are determined in correspondence with other images.
- It is based on the principle of motion parallax (Structure from Motion [SfM]) which, along with stereo vision, is the principle of how we determine depth.
- However, certain optical issues can confuse the algorithm reading of images - creating errors.
- Peculiar errors and aberrations occur under certain conditions - these imaging attributes reveal a break from representational calculations but show estimations, extrapolations, and misgivings of the algorithms in the creation of glitches.
- This workshop aims to explore and expand methods for testing and disrupting the image making technologies.

Task 1:

- Find an TWO objects to scan
 - Find ones that you think will be *EASY* to scan.
 - Find a surface to put it on (table or floor) that you can easily get all the way around.
 - Find some markers to put around your chosen object.



Task 1 discussion

-

Upload images and
objs to the hyper -
drive



How did it go?



What worked well? Did it scan accurately?



What didn't work so well? Are parts of it glitched/inaccurate/cropped?



Did the scan come out different to how you expected?



Task 2:

- Set up a situation you think will be DIFFICULT to scan
 - *FIRST: everyone write a suggestion in the chat box of an object that may be tricky to scan.*
 - *What does photogrammetry struggle to capture?*
 - ***Transparent, Reflective, Refractive, Specular, Bland, Repetitive/patterned, Symmetrical .***
 - *REMOVE markers around your chosen object to disorientate the technology.*

Task 2 discussion

—
Upload images and
objs to the hyper -
drive



How did it go? Did you get anything at all?



What did photogrammetry struggle to capture?



In ways did this affect the image? Is it the mesh or the texture that is warped?



Did the scan come out different to how you expected?