

# Hard place / Good place

## Technical Introduction



### SCANIVERSE

The *Scaniverse* app lets you capture, edit, and share 3D content directly from a mobile device. It builds 3D models with the help of a depth sensor (LIDAR) built into the latest generation of iPhone Pro or iPad Pro.

Places or objects suitable for 3D scanning should be static, as moving elements will not scan very well. You can scan a car while it is stationary, but you won't be able to scan it while it is driving past, same for ripples on a water surface, they won't scan. You could scan a person, however this person would need to keep still while you do so. Think of it as capturing a 3D photograph, and not recording a video. Highly reflective or translucent objects are also problematic as are very intricate subjects like leaves on a tree (which might also move in the wind). Experiment with your subject to see how and what works best.

Do not expect a perfect result though, this technology is still in its infancy and you will probably get a few holes and inconsistency in your model. But this does not necessarily a problem, the team at fEEL will help with tips and cleanup of the model. For outdoor scans, don't be surprised if there is no sky, as it won't scan. But once viewed in AR, the missing sky will be replaced by the real-world sky or ceiling.

The scanning process requires you to move around the object or within the scene while you scan. The depth sensor can not 'look' through or behind elements in the scene, and it has a limited range of 5 meter, so to capture the entire scene or an object, you need to scan it from all angles. This is achieved by moving around with the device, while pointing the sensor at the surface you want to scan.

Your place should not be too expansive. The viewer in the AR app should be able to explore the scanned place within the spatial constraint of a gallery space or even a living room. For example a single room, a small backyard, a street corner or a park bench with its immediate surroundings. The place does not need to be a one-to-one spatial representation, but could be assembled from multiple 3D scans. The team at the fEEL Lab can assist you in the process.

Here are a few tips to help you produce high-quality scans:

- Plan ahead to decide how you'll move around the object or area that you want to scan. Make sure you have a clear path with as few obstructions as possible.
- Avoid visiting the same area multiple times in a scan. This can lead to misalignments between the different passes. Try to work your way around an object in one direction, or move from one end of a room to the other.
- Move smoothly. Avoid turning suddenly or bumping your iPhone or iPad. This will improve tracking accuracy and reduce motion blur.
- Make sure your scene is well-lit. If you have to scan in a darker setting, it's even more important to move slowly and smoothly.
- When scanning small things, reduce the LiDAR range to avoid capturing objects in the background. You can set the range before or during your scan by pressing the Range button on the scanning screen.
- The stripes can help you find areas that still need to be scanned. However, it's not necessary to make every last stripe disappear. Scaniverse is able to fill small holes and other defects.
- You can temporarily pause a scan by pressing the pause button that appears to the right of the record button while scanning. Press it a second time to resume scanning.
- After processing your scan, use the crop tool (press Edit > Crop) to trim out unwanted areas.

#### Resources:

- Scaniverse website: <https://scaniverse.com>
- A [video](#) that outlines the 3D scanning process of an object.
- A [video](#) that demonstrates the 3D scanning process of a place.
- A few demo scans to view on Sketchfab: <https://sketchfab.com/feelab/models>

## Example Scans

A few example scans are available on [Sketchfab here](#). You can explore the models in your browser or view them in AR, if you open them in the [Sketchfab app](#).



A scan of a bridge as a 3D model (l), and the same model viewed in AR.



<https://sketchfab.com/3d-models/backyard-497f7124982d496cbcbc9a6fa0e24867>



<https://sketchfab.com/3d-models/backyard-1-dd376c3eab8548b780794fd67f36f799>



<https://sketchfab.com/3d-models/workshop-61dece3047ac4ee7bce3b4b1fbcefd23>



<https://sketchfab.com/3d-models/shed-3a3ac1a94e7c48f0b519387071b8d1b0>

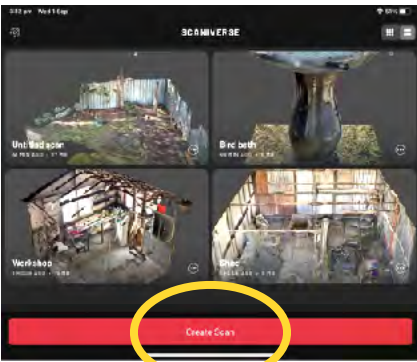
## Scaniverse Step by step

0 - Switch device to flight-mode to prevent interruptions while scanning

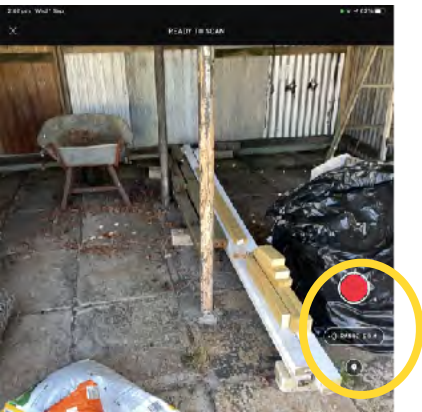
1 - launch the **Scaniverse** app



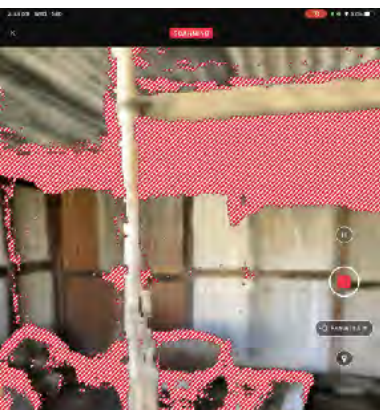
2 - review existing scan or create new



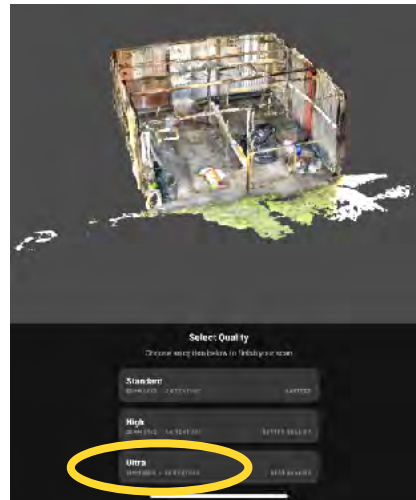
3 - Start scan. You can also adjust the sensor range before the scan. To stop, press this button again.



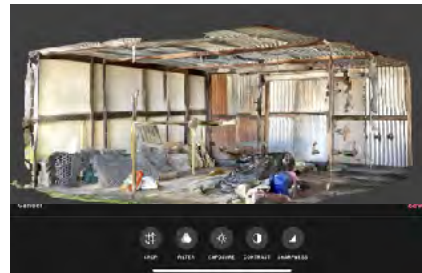
4 - Scanning - the red areas indicate surfaces that have not yet been scanned



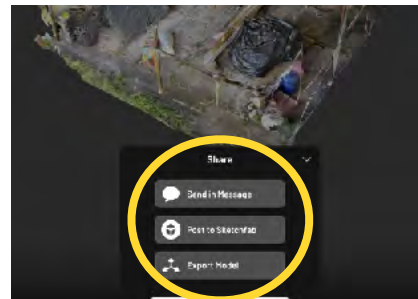
5 - After you have finished the scan, you need to process the data. Use the **Ultra** settings.



6 - After processing you can review and edit or share the model. Use common touch gestures to navigate the model.



7 - Share model with collaborators either by export (as OBJ file) or upload directly to the Feelab Sketchfab online 3D model repository.



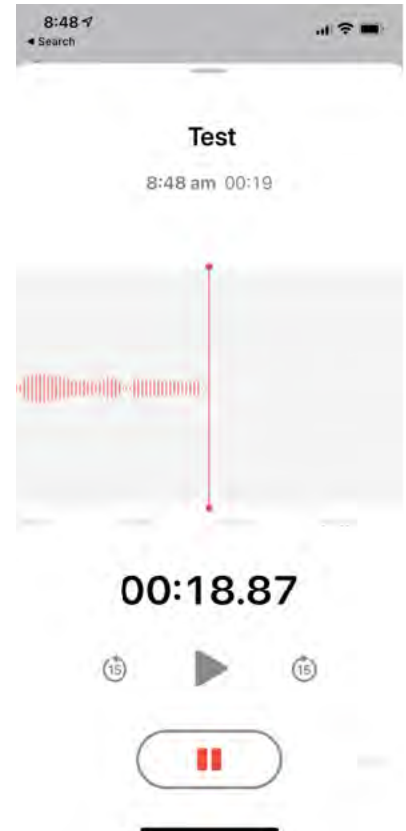


# Voice Recording

Use the Apple *Voice Memos* app on iOS to record your narrative with the Rode smartLav+ lavalier microphone. The Microphone also works with Android devices, in this case you won't need the Lightning-Headphone adapter.

Tips for using the RØDE smartLav video: <https://vimeo.com/61507728>

1. Attach the mic on your clothing with the clip, about 10-15 cm from your face.
2. Make sure the mic capsule (the foam cover) does not touch your clothing while you record and move around, as this will cause unwanted noise and clicks. You can experiment with mounting the mic up-side-down as it is omni-directional
3. Plug microphone into the adapter (either for iPad or iPhone, no adapter needed for most older phones, including Android) and plug the adapter into your iOS device
4. Switch device to **flight-mode** to prevent interruptions while recording
5. Launch the built-in Apple Voice Memo app
6. Make a short test recording
7. Unplug the mic and press play to evaluate the recording, preferable with headphones.  
**Note**, while the mic is plugged in, you won't hear the playback.
8. Plug the mic back in and start with the principle recording



Alternatively, you can record with the free [RØDE Rec LE app](#), available on the Apple App store. This sound recording app allows for more control such as microphone gain. Other recording apps should work as well.



RØDE Rec LE app