

# Photogrammetry

Photogrammetry is a technique through which you can extract 3D information from photographs. By extensively photographing an object from all sides, you can use software like Polycam or Abound to create a 3D mesh from these photo's. This mesh can then be imported into 3D software like Blender, and can be rendered using the photo's as textures.

- [Polycam](#)
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# Polycam

Abound

# Reality Capture

# Tools to aid in photogrammetry

Circular polarisation filters

Anti-reflective coating spray

# Gaussian Splatting

Diverse tutorials gaussian splatting:

<https://www.youtube.com/embed/kZ5GHG0pb-E>

importing .ply gaussian splat in Blender

<https://www.youtube.com/embed/yKz7OfomyCo>

<https://www.youtube.com/embed/ERuRMOVO58Q?t=668s>

# Core principles of photogrammetry

Image quality, Information overlap, Subject coverage

All information on this page was taken from this Unreal Engine YouTube seminar:

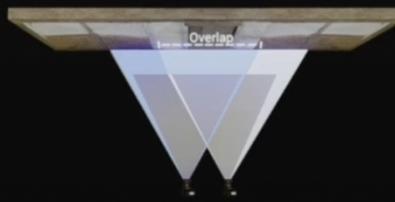
<https://www.youtube.com/watch?v=5D-P2kRUuKA&t=928s>

## Core Principles of Photogrammetry

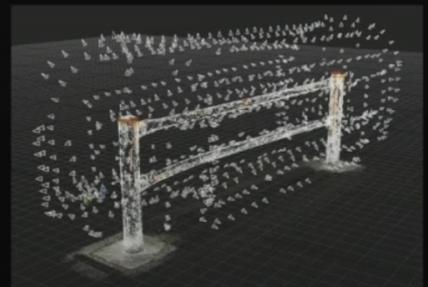
The three biggest considerations for scanning are:



Image quality



Information overlap



Subject coverage

## Core Principles of Photogrammetry

### Image quality

The first consideration, image quality. This means images must be sharp, in focus, with a deep depth of field, and without blur or digital noise.



Good



Blurry



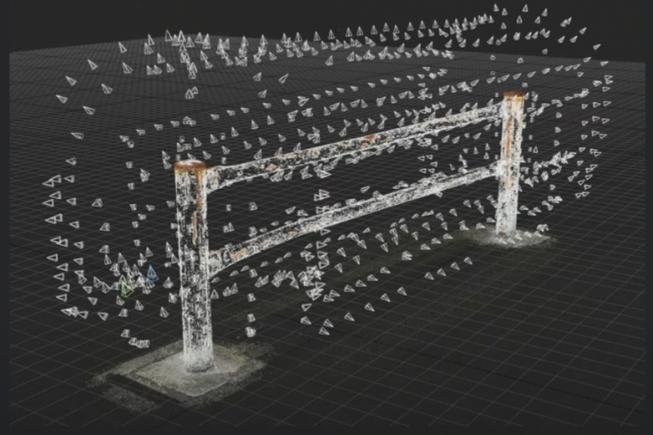
Noisy

# Core Principles of Photogrammetry

## Subject coverage

For the computer to realize the subject, the entire subject must be captured within the set of images.

If there is a gap or missing information in the images, the computer cannot fill that gap. For this reason, many images are taken of the subject from differing angles to ensure 100% subject coverage within the images.



# Core Principles of Photogrammetry

## Information overlap

For the computer to relate two images together, it compares color information from one image with color information from the other to determine how the images seam together.

The computer continues “folding” images in the set this way until the subject shape is fully formed digitally. To provide the computer with enough information to complete this task, scan images need to have approximately 70% overlap.

