Sun Ribbon - Inge King

Environment

Background
Lighting
Photography

Geometric Features

Motion
Features
Variation
Detail
Visibility

Visual Features

Contrast
Colour
Texture
Repetition

Transparency/Reflectivity

Transparency
Reflectivity

Abstract

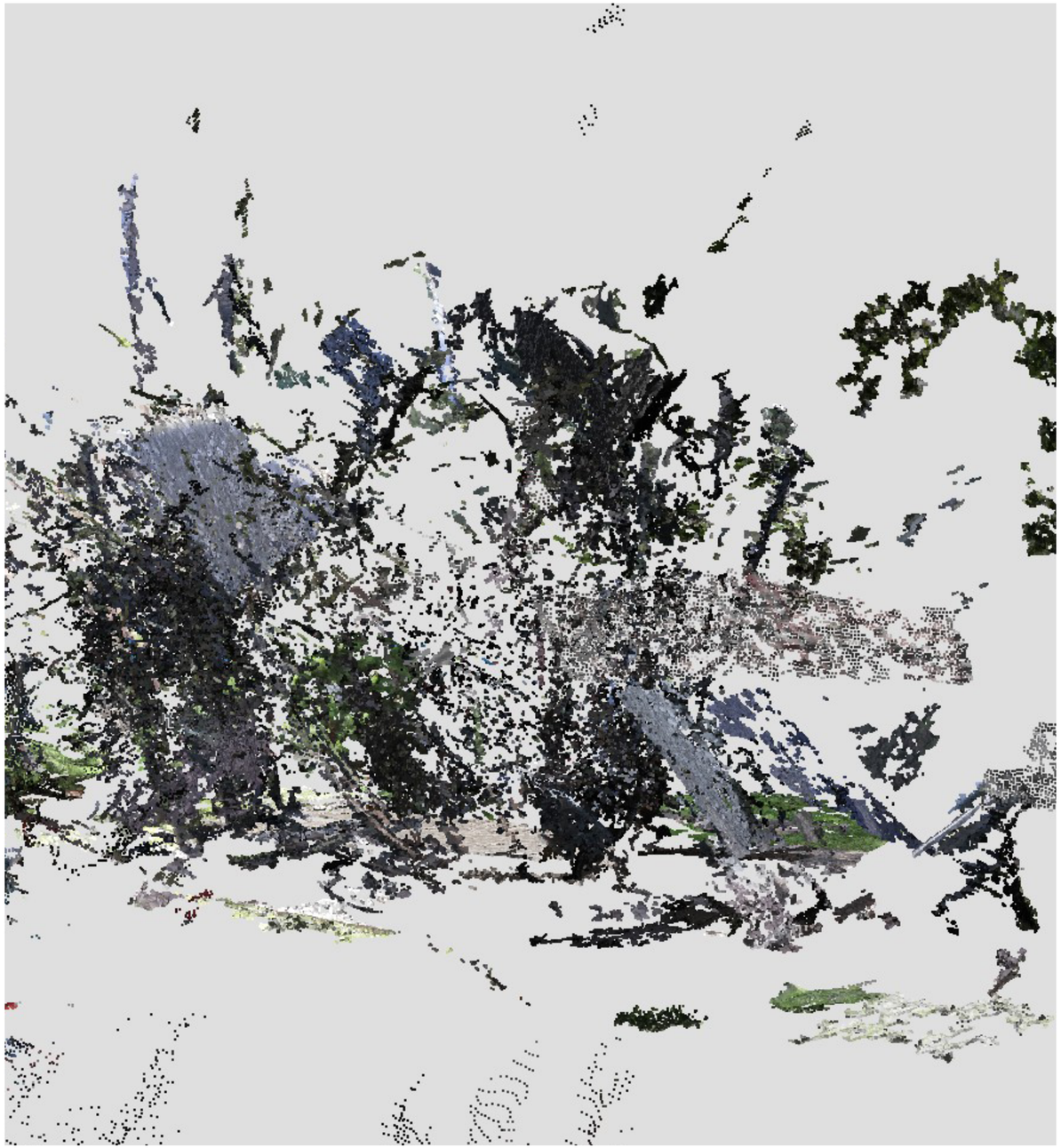
March 2020
Agisoft Metashape v.1.6.2
Loans Desk High Use Kit - Canon

The initial photogrammetry of this object was very noisy as photo alignment was not perfect. The main culprit was not-ideal visual features due to the reflectivity and the harsh sunlight combined with a generally flat and featureless surfaces.

The initial pathing for this object also could not capture all the necessary aspects to form a complete model.

Techniques Applied:
Different Time of Day
Adjusted Pathing
Markers on Subject

Before



After Supplementary Techniques

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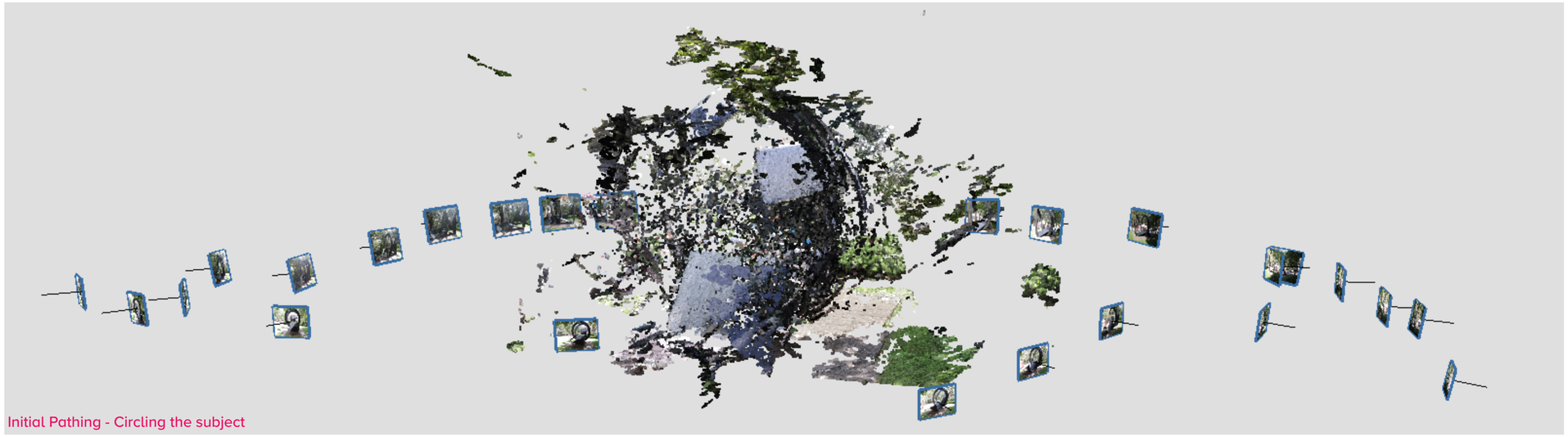
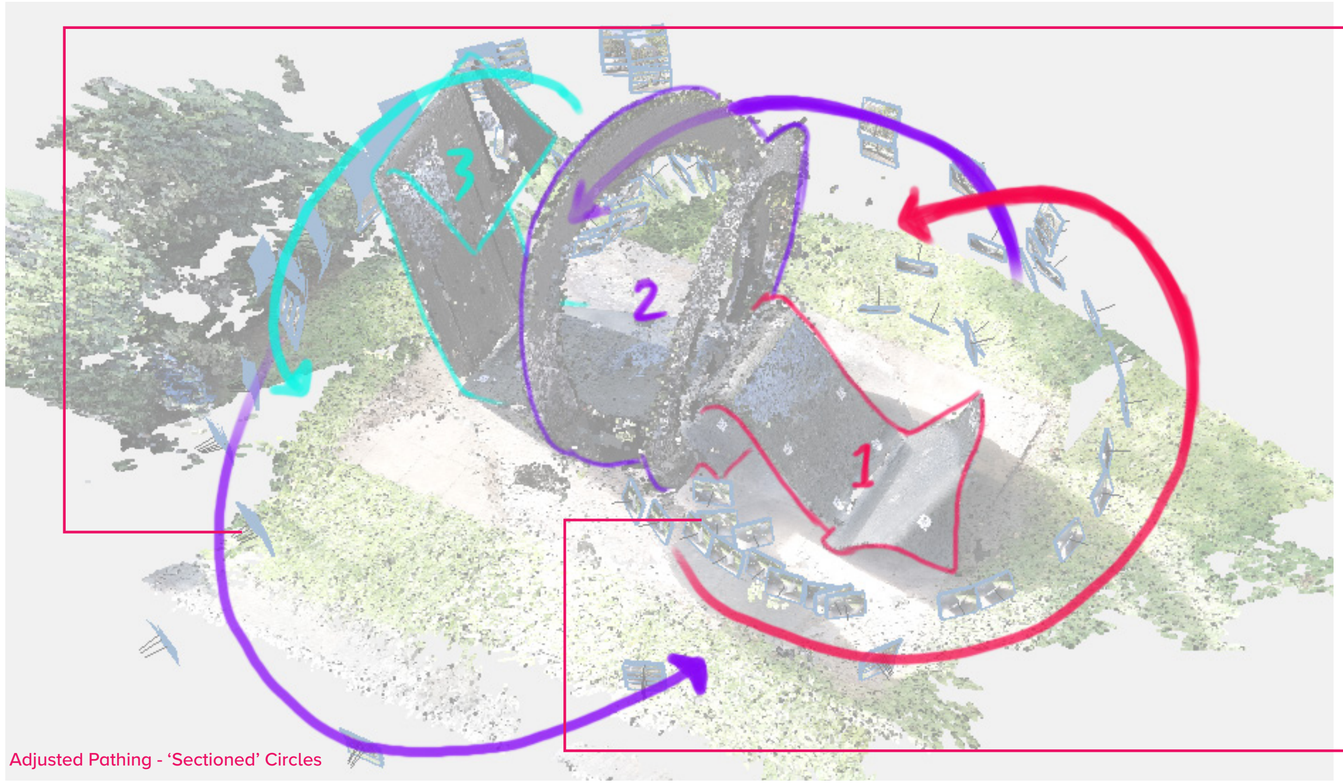


Initial Pathing - Circling the subject



Adjusted Pathing - ‘Sectioned’ Circles

Geometric Features

Motion
Features
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Visibility

The subject is a completely static sculpture and was not in **motion;** the optimum.

No changes were necessary.

Regarding **Features and Variation**, we were able to capture most of the object in frame at all times and there is a lot of geometric variation across the sculplture, no single part is like any other part when considering the frame as a whole.

No changes were necessary.

Regarding **Details,** the subject was overall very thin, but the main issue were the two rings due to the their proportions. Thickness is usually hard to capture with thin objects. Initial attempts resulted in very poor alignment of the ring, no doubt due to its thin-ness.

In response to this issue, we attempted to use markers on the subject to give a better reference point.

Pathing was also adjusted to better account for the rings, minimising the side-profile, and instead trying to capture as much of the ring from the front as possible. When taking these photos, we could go closer because of the markers, but we always tried to maintain other markers in the periphery so as to not focus on any one feature. This would give the software more opportunities for alignment.

Some parts of the subject were not **visible** in the initial photography session, like the underside.

In response to this, in addition to the markers, we adjusted our pathing to include the underside.

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The immedate **Background** of grass and bushes was mostly static. There were pedestrians from time to time but none were close enough to intefere with the process.

No changes were necessary.

Lighting was not ideal due to the initial harsh sunlight, combined with the **reflectivity** of the subject due to its shiny steel materiality, caused many areas to be over-exposed or under-exposed.

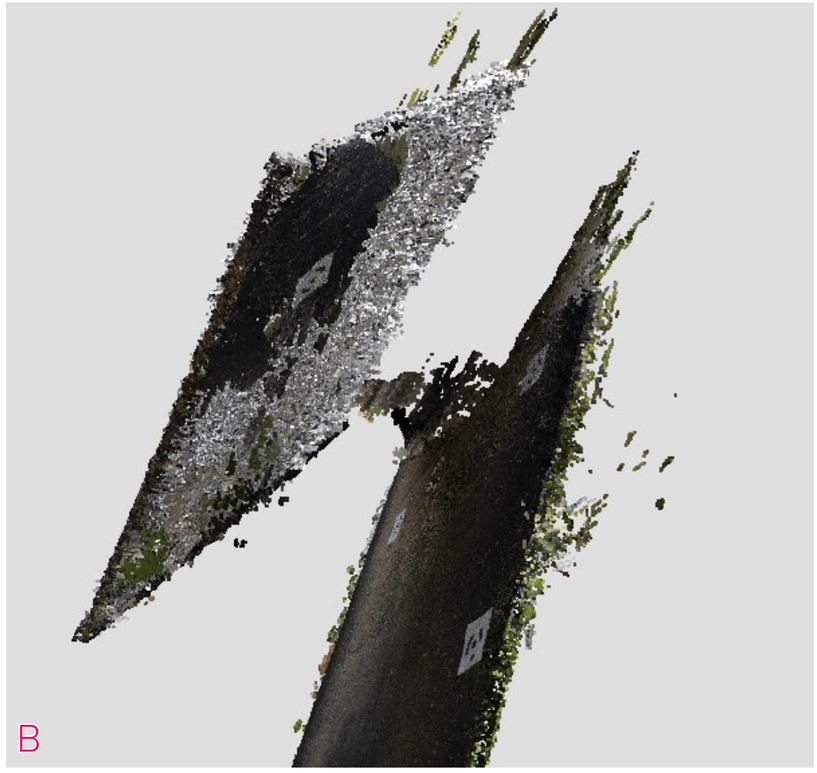
In response to this issue, the subject was photographed at a later time when the sky was a bit more overcast. This allowed for less harsh shadows and no more over-exposed highlights reflected off the subject.

A-B: Extremely dark shadows translates to a poor understanding of depht by the software, note the entire undersection that was not able to be generated.

C-D: Less contrast, subtle, but translates to the area being captured.

One of the main challenges of this subject were the **visual features,** the the lack of any surface detail and colour variation due to its materiality resulted in whole areas of the surface to not be captured initially. The surface was smooth with little to no disrepancies that were large enough to be captured by the software.

In response to this, markers were used on the subject as references, and a lot more photos were taken [E-F]. These are the same areas of the subject, you can see the difference that markers being captured more thoroughly makes.



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Ease of Photography was decent but not perfect, it was impossible to get the object in frame from some locations.

In response to this issue, markers were laid out based on what the camera could see, Agisoft Metashape recommends that at least four markers need to be in frame.

A: In this back part that was hard to access, it was difficult to capture the entire geometry in one frame., More markers were placed based on the frame of the photo and a sweeping technique was used for the photography.

Further Improvements

Some areas along the underside were still not captured well [B], this was due to very high contrast black shadows. Pure black (or white) means that no depth detail can be extracted by the software.

In response to this, a Flash mounted to the camera, or introducing a secondary light source to bring back some light to these shadowed areas should help.