PHOTOGRAMMETRY – AGISOFT METASHAPE

Building a Mesh Model (Professional Edition) (04.09)

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ABOUT AGISOFT METASHAPE

Agisoft Metashape is a stand-alone software product that performs photogrammetric processing of digital images and generates 3D spatial data to be used in GIS applications, cultural heritage documentation, and visual effects production as well as for indirect measurements of objects of various scales. This software provides a platform for cultural heritage specialists to create virtual reality scenes, textured 3D meshes, orthographic projections, geo-referenced maps and much more from images and/or laser scans completely automatically.

This **ASOR Tutorial (04.09)** will demonstrate how to build a mesh model in Agisoft Metashape Professional on a Windows desktop. Metashape can construct a polygonal mesh model based on the point cloud information created in **ASOR Tutorial 04.08 (Building a Dense Cloud Model)**.

ASOR's tutorials for Metashape are focused on creating 3D surfaces and orthophotos of objects, monuments, and architecture during cultural heritage surveys through the eastern Mediterranean and northern Africa. ASOR plans to expand the scope of its photogrammetry tutorials, however for any questions that aren't covered in these tutorials, please visit Agisoft's Community page, which includes video and written tutorials, the software's manual, and a community forum comprised of Metashape users.

BUILD A MESH

1. Begin building a mesh model by selecting the **Workflow Menu** > **Build Mesh**.
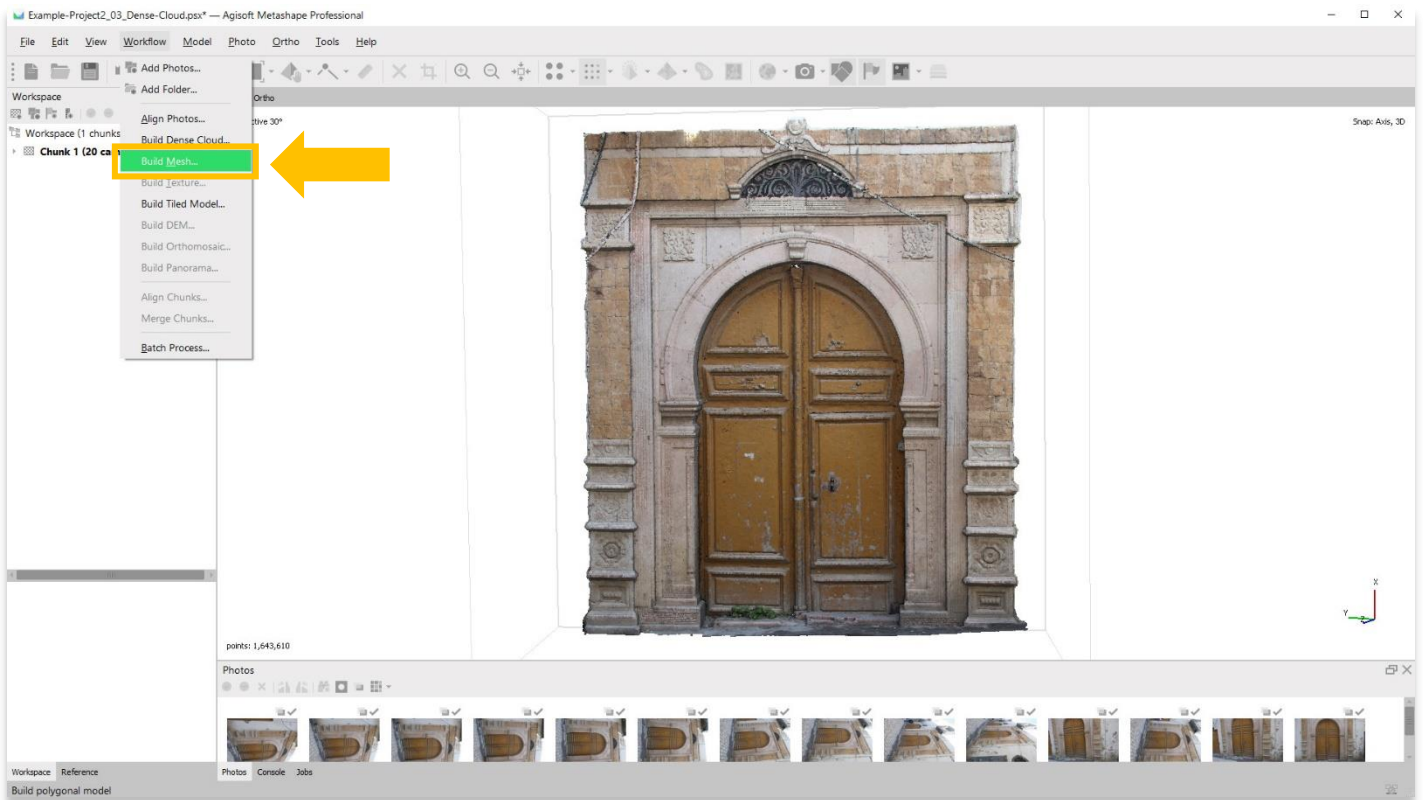
2. A pop-up will appear that provides options for setting the accuracy of the model. Set the accuracy to **High** or **Highest** if possible. Use the following settings show in the screenshot below. Press **OK** when ready.
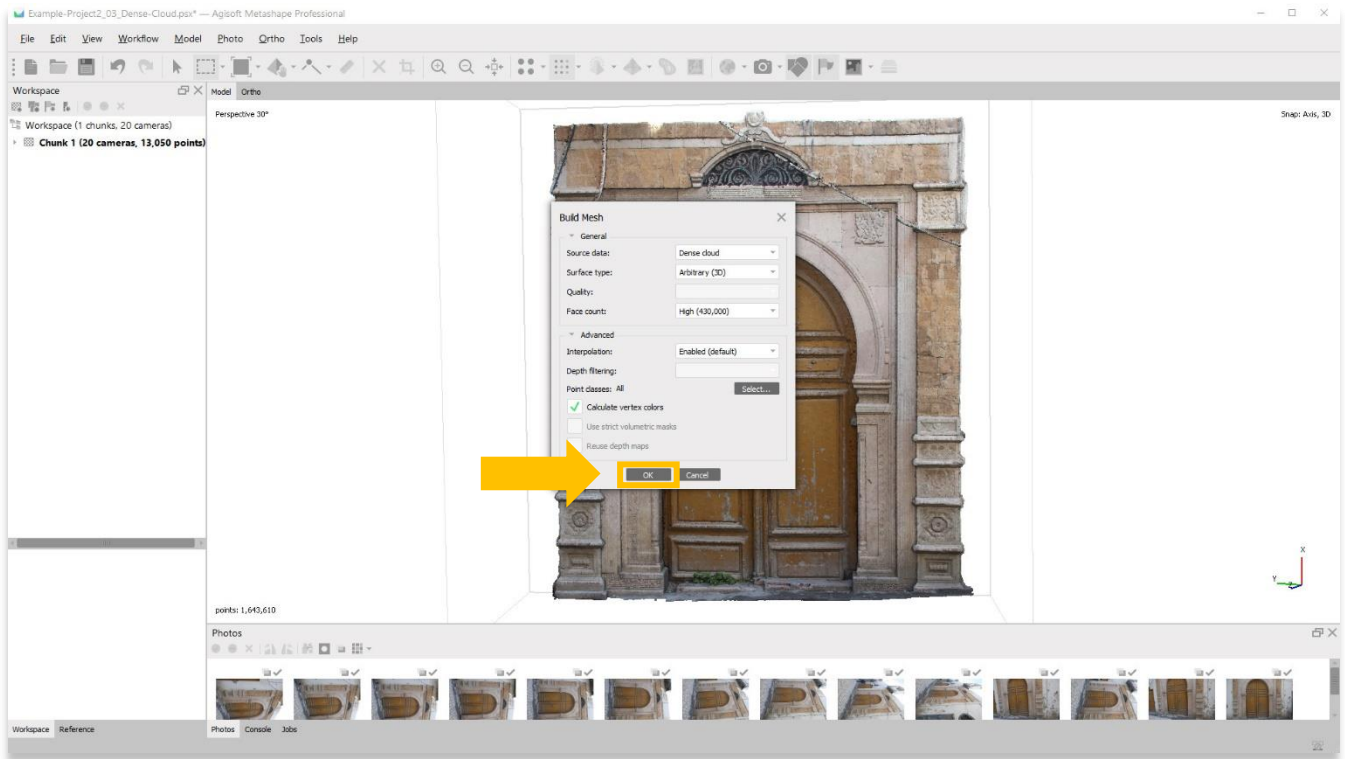

3. This step could take several hours or even days to complete. Your computer may not have enough RAM or memory to complete this step at **Highest** accuracy. Select the next best option until you are able to complete this step.
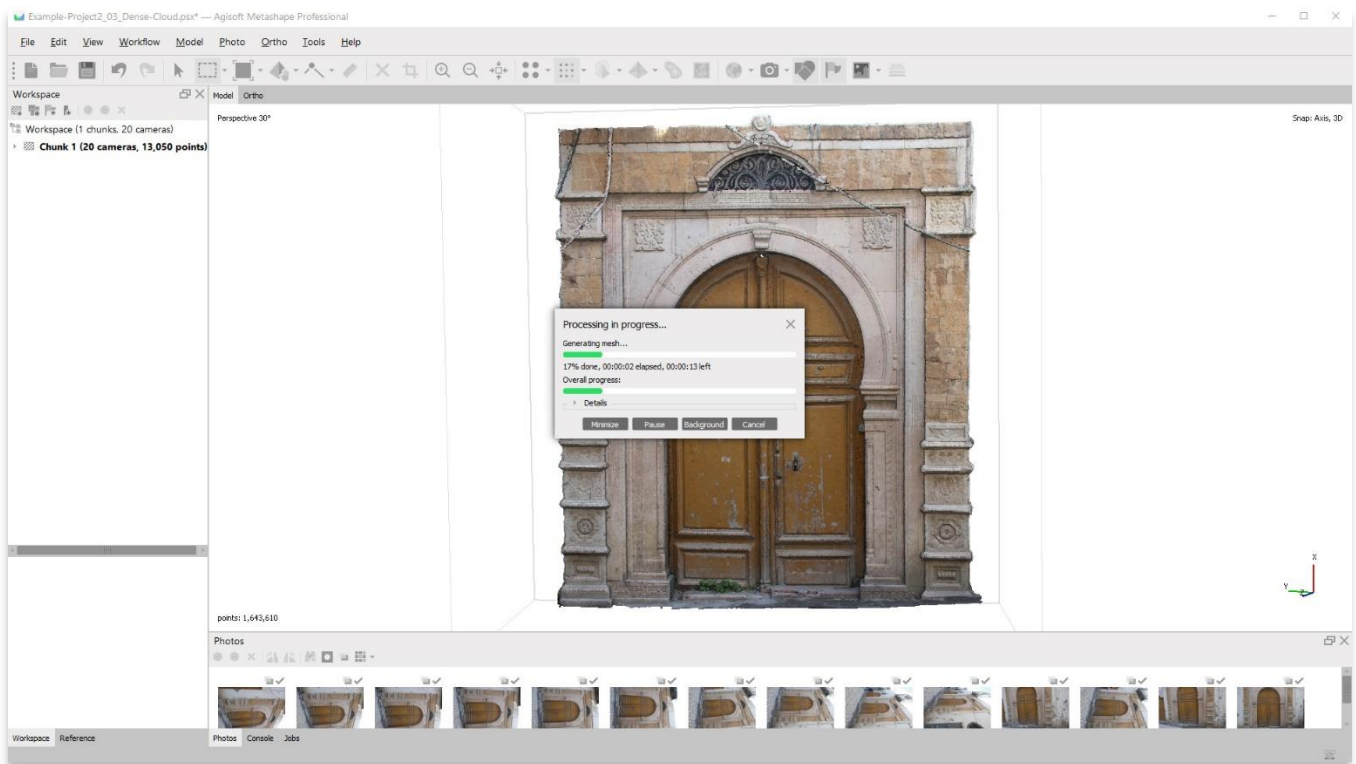
4. Once completed, the main panel will render a <u>mesh</u> representation of your object/3D surface. To view the mesh model, choose the **Model** button in the top tool bar. There are 4 options to view your mesh model: (1) **Shaded**, (2) **Solid**, (3) **Wireframe**, (4) **Confidence**.
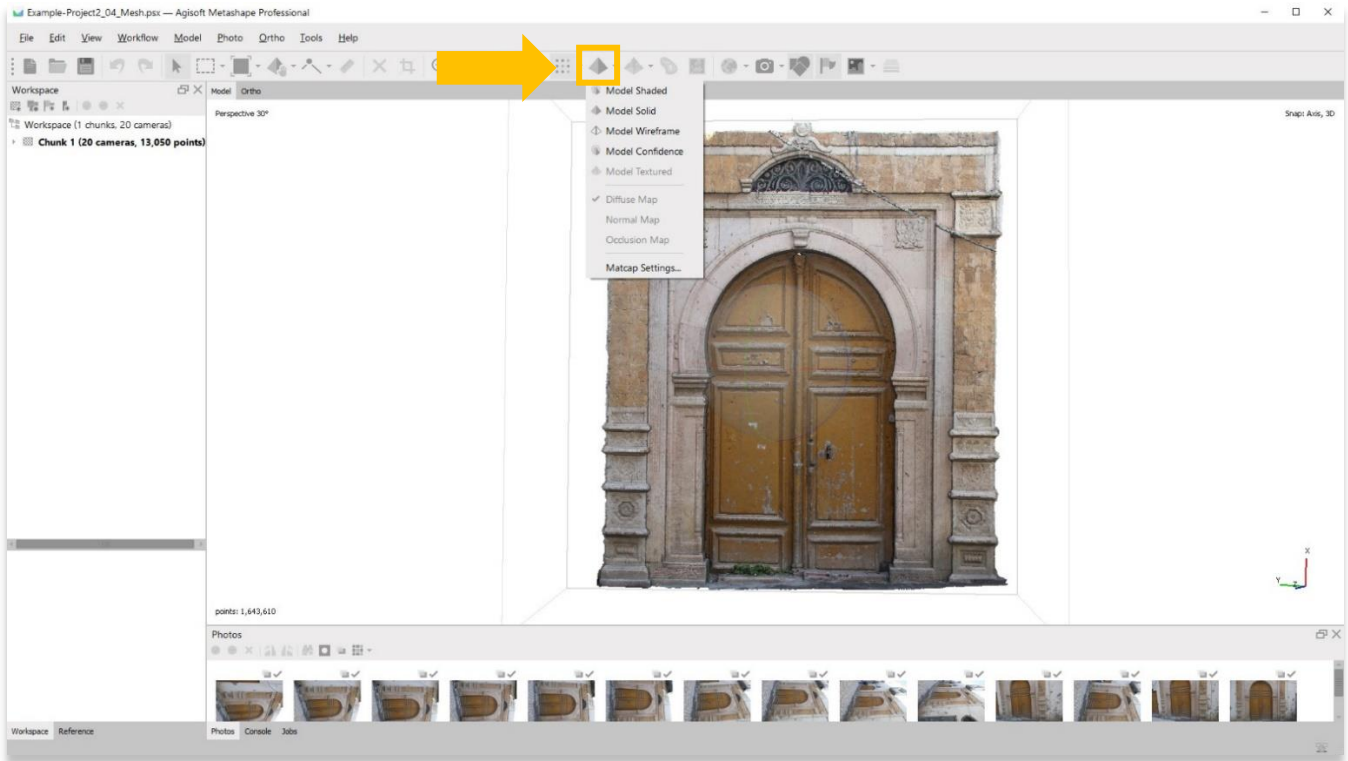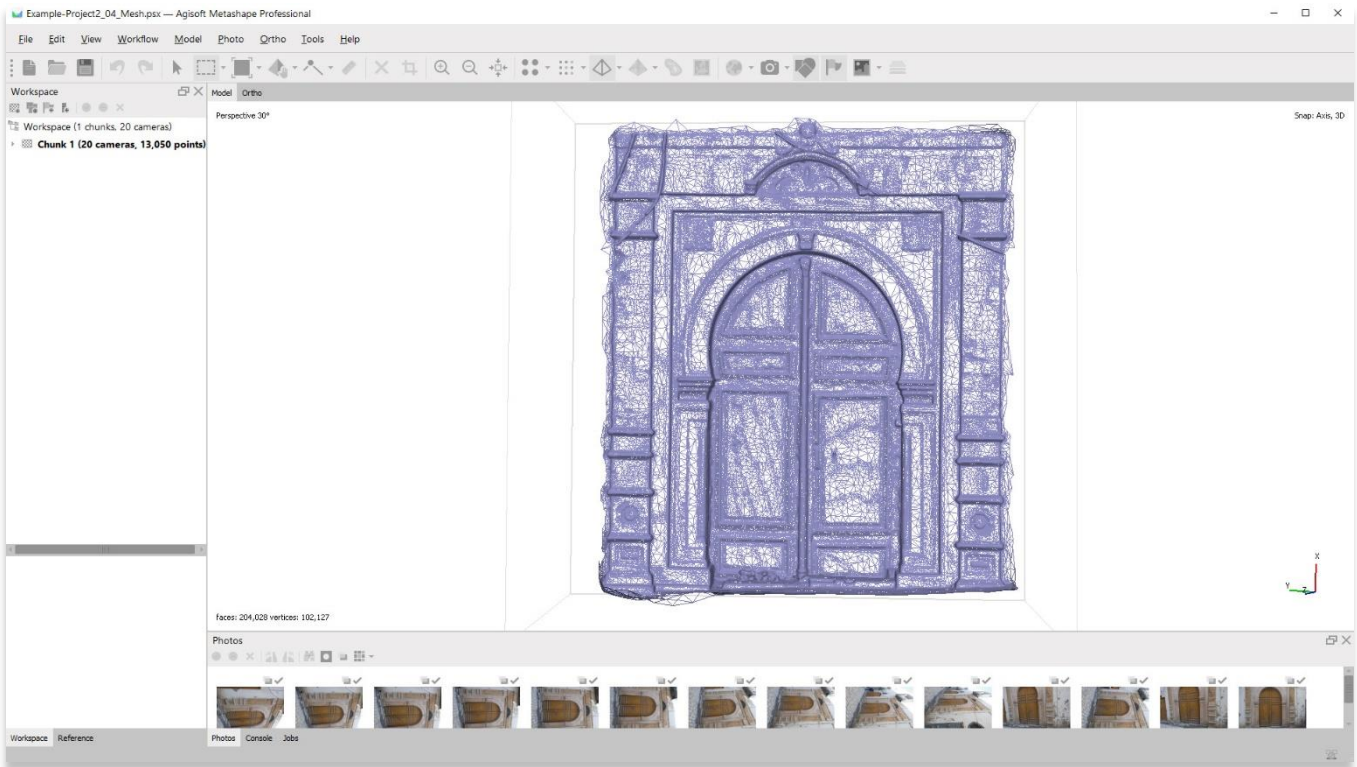

5. A **Shaded Model** displays the vertices (points in the dense cloud) colored with interpolated colors taken from the photos.
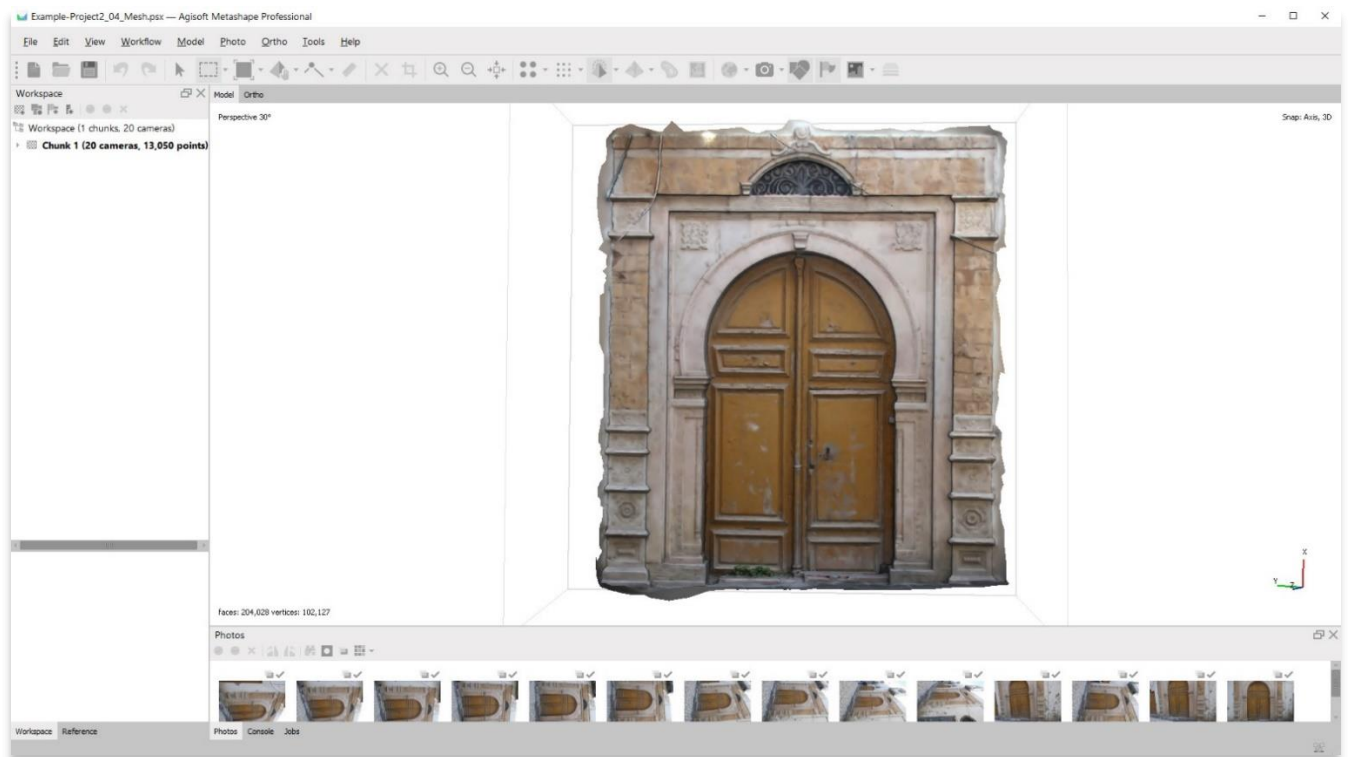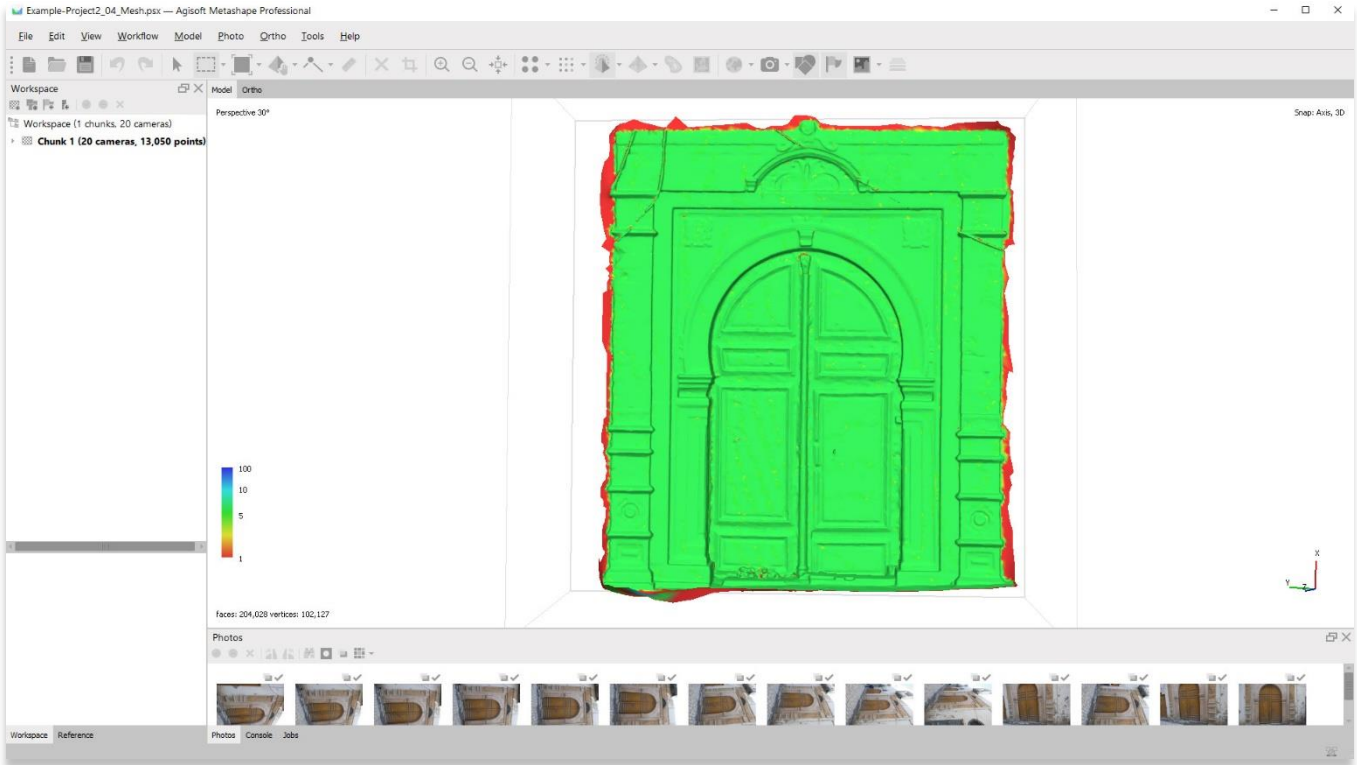
6. A **Solid Model** displays the topography of the surface.
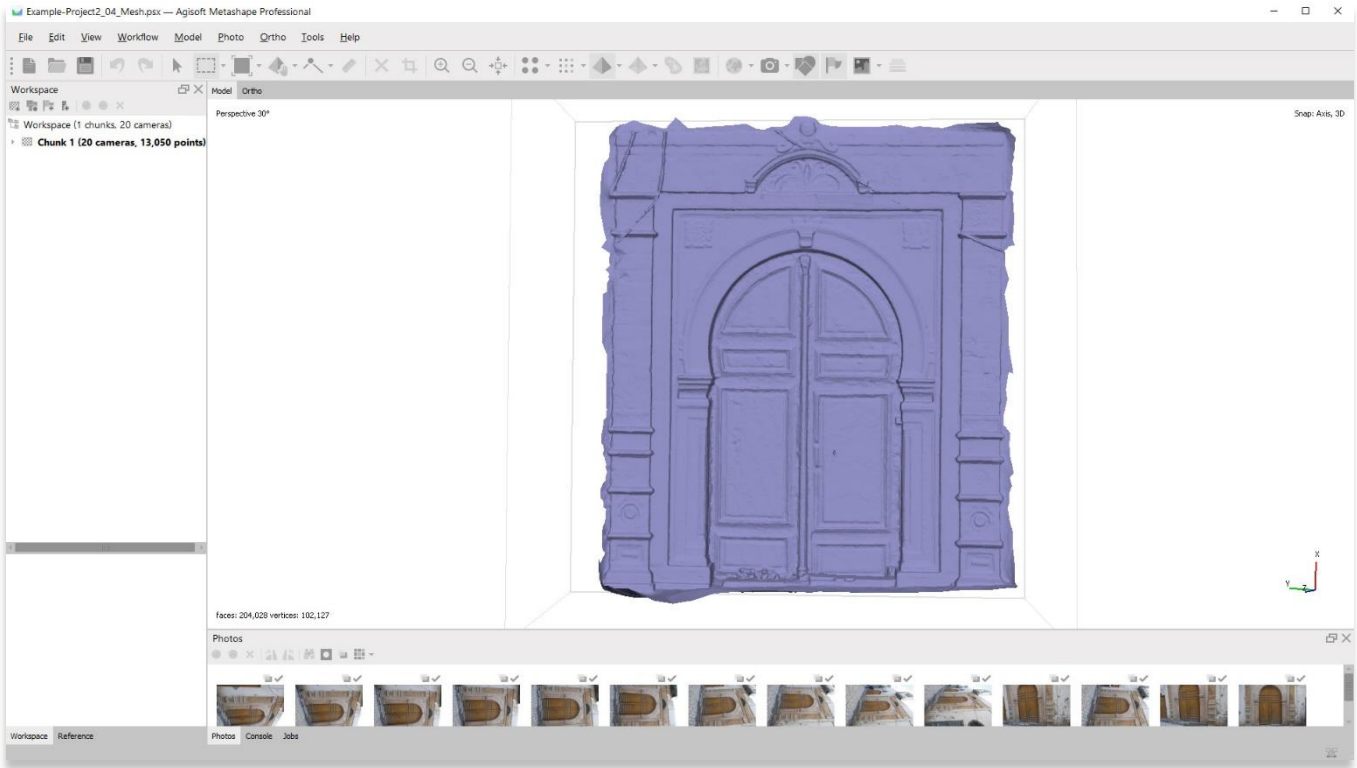
7. A **Wireframe Model** displays how the vertices (points) are connected to one another.

8. A **Confidence Model** displays vertices colored according to Metashape's confidence in the accuracy of the model. Accuracy confidence can be improved with the inclusion of tie point markers and/or importing measurement data.

9. <u>**Save your project**</u> before moving onto the next step in the **Workflow** menu.