

# Structure from Motion (SfM)

Structure from motion (SfM) photogrammetry is a highly effective method of reconstructing objects and surfaces. There are a wide range of applications and services for making models from SfM math.

## Applications

Software	Cost	Output
<a href="#">PhotoSynth</a>	Free	Sparse Point Cloud
<a href="#">Bundler</a>	Free	Sparse Point Cloud
<a href="#">Patch Based Multi-View Stereo</a>	Free	Dense Point Cloud
<a href="#">Clustering Views Multi-View Stereo</a>	Free	Dense Point Cloud
<a href="#">Automatic Reconstruction Conduit (ARC3D)</a>	Free	Photo Textured Polygons
<a href="#">Agisoft PhotoScan Standard</a>	50 Educational 150 Commercial	Photo Textured Polygons
<a href="#">Agisoft PhotoScan Pro</a>	300 Educational 3000 Commercial	Photo Textured Polygons
<a href="#">Agisoft StereoScan (free)</a>	Free	Photo Textured Polygons
<a href="#">Agisoft Lens</a>	Free	Lens Calibration
<a href="#">Hypr3D</a>	Free	Photo Textured Polygons
<a href="#">Visual SfM</a>	Free	Dense reconstruction based on CMVS. <a href="#">Here is a tutorial.</a>

[Hypr3D](#) allows one to build and display SfM models online.

Below is a model of Huaca generated from a collection of kite aerial photographs.

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The YouTube video shows the process of building a model. The clip also illustrates exporting the model to MeshLab, model cleaning, and transformation to the proper scale.

Here is a clip illustrating the use of Visual SfM