PhotoScan

Fully automated professional photogrammetric kit
Agisoft PhotoScan is a stand-alone photogrammetric software solution for automatic generation of dense point clouds, textured polygonal models, georeferenced true orthomosaics and DSMs / DTMs from still images.

Based on the state-of-the-art technology developed by Agisoft, it allows for very fast processing (typically within a couple of hours), providing at the same time highly accurate results (up to 3cm for aerial, and up to 1mm for close-range photography).

Agisoft PhotoScan is capable of processing of thousands of photos, yet all the processing is performed locally, without the need to transmit the data outside the company, making it ideal solution for processing of sensitive data.

The software package has a linear project-based workflow that is intuitive and can be easily mastered even by a non-specialist, while professional photogrammetrists have complete control over the results accuracy, with detailed report being generated at the end of processing.
Advantages

01. Highly accurate and detailed results
02. Fully automated and intuitive workflow
03. GPU acceleration for faster processing
04. Network processing for large projects
05. Reasonably powerful Standard edition for art projects
06. Easy sharing with PDF / fly through video export and direct upload to online resources
07. Stereoscopic measurements for precise feature extraction

Capabilities

01. Aerial and close-range triangulation
02. Incremental image alignment
03. Dense point cloud generation and classification
04. True orthomosaic and DSM / DTM generation
05. Orthomosaic seamline editing
06. Elevation contour lines generation
07. Georeferencing using flight log and/or GCPs
08. Coded and non-coded targets auto detection
09. Coordinate / distance / area / volume measurements
10. Multispectral imagery processing and vegetation index calculation
11. Polygonal model reconstruction and texturing
12. Hierarchical tiled model generation and visualization
13. 4D reconstruction for dynamic scenes
14. Spherical panorama stitching
15. Built-in Python scripting for job automation
16. Headless operation support

Compatibility

01. Supports digital / film / video cameras and data from fixed camera rigs
02. Processes images from frame / fisheye / spherical / cylindrical cameras
03. Works well with most UAVs
04. Exports results in widely supported formats
05. Supports most EPSG coordinate systems and configurable vertical datums
06. Runs on Windows, Mac OS X, Linux
Photorealistic, highly detailed 3D models, classified dense point clouds, fine resolution DEMs generated with Agisoft PhotoScan can be used in a wide range of applications, from visual effects industry to engineering projects.
Measure

High accuracy of polygonal models and DSMs reconstructed with Agisoft PhotoScan guarantees precise area and volume measurements. Multispectral imagery processing with radiometric calibration support allows for precise NDVI index calculation, which makes PhotoScan software a valuable tool for agricultural projects.
Visualize

Network processing capability of Agisoft PhotoScan allows to efficiently reduce computation time while working with massive data. Optimized hierarchical tiled model generation provides for city-scale modeling making all the operations with the big data very smooth in a compatible GIS.
PhotoScan is a perfect tool for aerial imagery processing. The functionality of the program is being constantly developed according to the tasks set by rapidly emerging UAS industry.

PhotoScan has proved to be a professional level post-processing tool capable of dense point clouds generation and classification for further exceptionally detailed DSMs/DTMs calculations and high-resolution seamless orthomosaics export, not to mention reconstruction of precise polygonal models of large scale objects. It is an indispensable part of the GIS workflow starting with a UAV system.

Highly accurate DEMs produced by PhotoScan lay the grounds for precise area and volume measurements, both for excavations and piles. Once multiple flights performed at different time moments, PhotoScan allows for volume change tracking, soil erosion and glacier studies.

With support for panchromatic, multispectral and thermal imagery, PhotoScan seamlessly integrates into workflows involving processing of data from diverse sources, like vegetation and soil analysis, fires and night studies, etc.

Vegetation indices calculation according to a user-defined formula allows to analyze crop problems and generate prescriptions for variable rate farming equipment.
Archaeology and Documentation

*Works well with consumer camera*

Archaeology more and more often relies on photogrammetric approaches today, be it a need to model an artifact or a demand for an excavation mapping.

![Image of an archaeological site]

Thanks to the capability to process imagery from any digital camera, PhotoScan is widely used in various archaeological projects both up in the mountains and deep under the water, including special researches like a greenery pattern study to find ancient ruins under the ground or a rock art documentation and analysis project.

Architecture and Cultural Heritage

*Oblique imagery support*

Numerous projects prove that PhotoScan is a quality tool to solve the tasks of facade and building modeling.

![Image of a reconstructed building]

With support for oblique imagery processing, PhotoScan allows to reconstruct the whole building, which can be employed for virtual tours creation, with reconstruction results being exhibited as illustrative models of large-scale cultural heritage objects. 3D models of partially ruined monuments and artifacts generated with PhotoScan present reliable basis for restoration works thanks to exceptional accuracy of reconstruction results.

Visual Effects and Game Design

*Photorealistic texture*

Thanks to being highly detailed and photorealistic, PhotoScan models meet the strict requirements of professional animation studios, which successfully employ the software for movie and game production.

![Image of a close-up of a face]

Face and body capture results, being among the most demanded ones, prove that PhotoScan potential goes beyond one’s imagination.
Agisoft PhotoScan 1.4 adds stereoscopic measurements capability for precise feature extraction using stereo-enabled hardware. Scanned aerial imagery with fiducial marks support enables processing of archive photo collections. New tiled model export formats provide compatibility with ArcGIS and Cesium platforms. Vegetation index accuracy is improved thanks to radiometric calibration plate support and integration of sensor metadata for MicaSense cameras. Mesh refinement and texture delighting tools help to enhance model quality for visual effects and game design professionals. Incremental image alignment, video import and fly through animation export will please every user of PhotoScan software.
Incremental image alignment allows to add missing images in course of processing. Dense point cloud display filters simplify editing operations. Mesh refinement is aimed at improving details on complex surfaces. Delighting algorithm generates shade-free textures.

Move/scale/rotate object tool permits to adjust coordinate system when reference information is not available.

Integration of additional meta data such as irradiance sensor measurements and camera exposure settings improves reliability of calculated vegetation indices.

Support for radiometric calibration plates with known albedo values helps to account for lighting conditions during the flight. Multispectral tiled models enable vegetation index inspection in three dimensions.

PhotoScan 1.4 enables to measure and vectorize the data in stereo view. Image overlays against 3D reconstruction results allow for highly accurate cursor positioning.

The support for 3D controllers provides operators with the possibility to use familiar input devices, while additional split screen 3D visualization modes extend compatibility to consumer range displays.

Stereoscopic Measurements

Precise Vegetation Indices

3D Modelling Tools
More Data Sources

PhotoScan 1.4 now works with **scanned aerial images** with fiducial marks.

**Video import tool** allows to use a video camera for time-efficient inspections.

**Camera rig support** is extended to include close range applications.

Other Improvements

Built-in support for **fly through** video generation

User configurable **datum transformations** to maintain required accuracy during processing

**Survey Statistics dialog** for handy inspection of the statistics data

**Indexed 3D Scene Layer** and **Cesium 3D Tiles** export for ArcGIS and Cesium platforms

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