General Requirements for executing AI Ground

- Auto AI Ground Classification Cloud Add-On License Product
- Must be assigned to a user's LP360 Online account through the Portal
- In LP360 Desktop, a user must be signed into their LP360 Online account to access the add-on license.
- All input LAS data must be projected.
- Individual LAS Files must have no overlap.

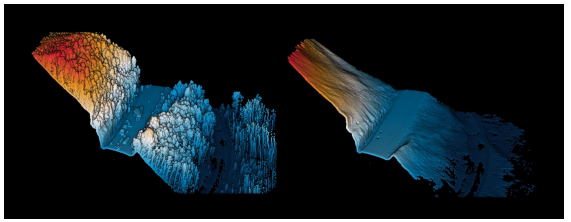
About the AI Ground Classification

LP360 AI Ground Classifier FAQ

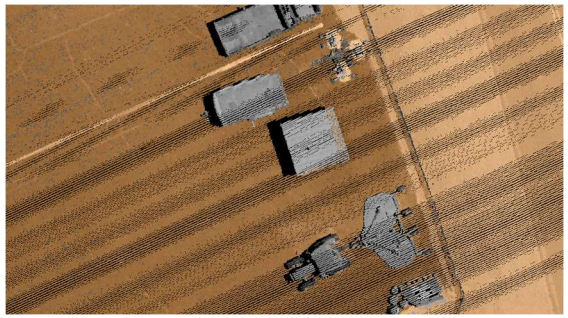
For additional information or documentation, please visit our searchable **Knowledge Base**: Support.lp360.com

Auto AI Ground Classifier

In this exercise, we will review the workflow for AI ground classification using LP360.



LP360



About the AI Ground Classifier

The **LP360 AI Ground Classifier** is a cloud-based AI processing task run through LP360 Cloud and seamlessly integrated within LP360 Desktop. It uses a pre-trained deep learning model to classify individual points in a point cloud as ground or non-ground.

The AI classifier is very effective at segmenting ground returns from non-ground. However, as with all analytical techniques, the AI results are not 100% accurate. Some clean-up is still expected, but users report significant less effort compared to the traditional ground classification approach.

The AI classifier includes options for outlier detection, smoothing, and noise deletion. These are optional steps that are not required by the AI classifier but are recommended for most datasets.

Advantages of the AI Classifier

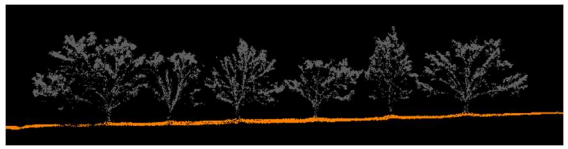
Compared with the (traditional) Adaptive TIN classification method, advantages include:

- Better overall results with less effort
- Can be executed on any unclassified point cloud, regardless of source. No pre-processing or set-up required.
- Better results in most complex terrain, underneath canopy, and areas with significant vertical structure.
- Better discrimination of low objects close to the ground – vehicles, curbs, low walls, bushes, and/or shrubs.

Using the AI Ground Classifier Tool

The AI Ground Classification tool allows users to submit 1 or more LAS Layers to the Cloud for classification, alleviating processing resources on your machine. The resulting point cloud will also be stored in your LP360 Cloud account and can be downloaded from anywhere.

The tool can be executed directly in LP360 or in the LP360 Cloud through a web browser.



Optional Parameters

The AI Ground Classifier tool includes the ability to execute additional steps (known as child jobs) prior to performing the classification step in the Job Manager. These steps are optional, but can help to clean up noise in the point cloud and re-size the LAS files for input. These steps can also be executed individually through separate tools directly in LP360.

Pre-Classification Parameters:

- **Outliers Classification** – should be used whenever the presence of gross outliers has been identified in the input point cloud.
- **Delete Noise Classes:** will delete any existing point in the Noise classes. It will also delete any points detected.
- **Smoothing** – used to reduce the "noise" observed in high density, noisy point cloud. Performs best in urban terrain. Not recommended for areas of dense vegetation.
- **Tiling** – LP360 automatically divides larger point clouds into tiles best suited for the AI Classifier. Each tile is orthogonal, covers a specific geographic area and contains only the LiDAR points. within that area.

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