Point Cloud Feature Intelligent Extraction and Analysis Software

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LIDAR360 MLS





SOFTWARE

POINT CLOUD FEATURE INTELLIGENT EXTRACTION AND ANALYSIS SOFTWARE

L iDAR360 MLS iDAR360MLS is a terrestrial mobile laser scanning(MLS) point cloud feature intelligent extraction and analysis software independently developed by GreenValley International, which supports the processing and analysis of LiDAR point cloud and image data obtained by mainstream vehicle-mounted, backpack, or handled mobile mapping systems on the market.

Based on the leading artificial intelligence algorithm, the software performs massive point cloud data editing, 3D feature extraction and analysis, 3D vectorization of road elements, etc. It has the features of rich function, convenient operation, intelligent and efficient, friendly interaction, forming a complete processing chain of MLS point cloud data processing, high definition map and road asset survey.

The result data exported by the software can be directly imported into GIS, CAD, and simulation platforms, which can be widely used in high definition map production, facade survey, road asset survey and maintenance, etc. LiDAR360MLS accelerates information extraction with intelligence and depicts the real world with digitalization.



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Main Modules

Foundation Platform

- Supports point cloud and panoramic data of mainstream mobile mapping systems on the market for processing and mapping.
- Support overlap display of multiple planar cameras, panoramic camera and point cloud data , measurement and boresight calibration ,assist data acquisition and editing.
- Combination display of multiple attributes, with additional attributes, to meet more application requirements.
- Rich point cloud snap tools, support automatic snap of feature points such as planes, ridges, and corners.
- Multiple block modes, work together to improve efficiency.
- AI-based point cloud semantic segmentation algorithm, which can quickly obtain highprecision results and accelerate the efficiency of subsequent production analysis.
- Added classification pre-training models for indoor and outdoor scene point cloud data obtained by SLAM device.
- New custom point cloud deep learning classification, users can train models suitable for their own data, and also added a few-sample learning model.
- Support vector result database storage for convenient management and format conversion.









Height





Density



RGB



Underground Parking Garage



Shopping Mall



Urban Road



Forestry



Mobile Laser Scanning Point Cloud Preprocessing



- Support point cloud boresight calibration, panoramic or planar camera extrinsic calibration, the mapping system does not need to be returned to the factory for calibration.
- Support point cloud and trajectory accuracy analysis, automatically identify and repair abnormal conditions such as trajectory jumps.
- Support relative alignment of MLS point cloud data, global optimization of multiple projects with control points, and output detailed accuracy reports to provide high-precision data support for subsequent applications.



Map Element Feature Extraction

- Automatic extraction of road elements and road facilities based on AI, which greatly improves efficiency and can quickly expand categories.
- Customizable road element symbol library, the drawing effect is 100% fit.
- Support the drawing of special symbols such as Chinese characters and letters, and enrich the achievement database.
- Interactive semi-automatic multi-element detection, improvement of mapping efficiency.
- Rich road element templates, one-click drag and drop.
- Support linear facility template customization to achieve batch extraction of line elements.
- Support individual segmentation and parameter extraction of road facilities such as poles and cars.



 object ID
 DBB(m)
 Height(m)
 Angle(")
 CrownWidth(m)
 Angle(")

 6
 6
 0.0305
 7.849
 0.411
 0.000
 1000

Gaoyuan Road Vector Editor

- Image (panoramic, planar, orthophoto) based vector drawing and editing.
- Rich vector editing tools, convenient operation, improve the accuracy and reliability of vectors.
- Support shortcut keys customization to improve the operability of production staff.
- Support mapping in multi-view (3D, 2D, section).
- Support precise editing of different snap modes.
- Support attribute table template configuration.
- Built-in national standard road asset symbol library and general symbol library.
- Support point cloud, feature, vertex/edge multi-level data to add annotation.

Gaovuan Road

- Support field calculator and object photo database storage.
- Attribute and geometry quality check tool.

Ainkang Street



Minkang Street



Facade Survey

- Seamlessly import LiGrip/LiBackpack/LiMobile point cloud and image data without format conversion and coordinate system definition.
- Provide multi-mode baseline collection method, adapt to multiple types of facade structures, and accurately locate side facade information.
- Provide facade verticalization function to solve the problem of SLAM data ground inclination.
- Provide convenient facade element drawing tools such as construction lines and grouping arrays to speed up production efficiency.
- Using panoramic images to assist facade survey, making the drawing of elements more complete and accurate.
- Provide accurate length and area calculation functions, and support exporting tables in other formats.
- Support exporting DXF, orthophoto result data,etc.



Road Analysis

- Extract road surface damage information based on high-precision MLS point cloud data to assist road maintenance inspection.
- Support 3D space analysis methods such as clearance analysis and viewshed analysis.
- Support road section analysis, compare and analyze multi-phase data and generate standard comparison reports.
 - Support the calculation of various road section parameters to assist in the analysis of road construction and other operations.



Urban Forestry

- Al-based point cloud classification.
- Single tree segmentation and parameter extraction.
- Single tree parameter measurement.
- Supports measurement of parameters including DBH, Height, Crown Width, Crown Length, Crown Diameter, Crown Diameter SN, Crown Diameter EW, CBH, Angle, Area, etc.
- Ecological landscape thematic map.
- Simulation analysis of Green Viewing Ratio(GVR), Green Volume, Sky View Factor(SVF), etc.







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