GreenValley International

LiPowerline

Point Cloud Processing Software
for Power Line Inspection & Analysis

LiPowerline is a LiDAR-based power application analysis software independently developed by GVI. It is designed for integrated scenarios of transmission, transformation, and distribution. By processing and analyzing massive point cloud data, LiPowerline can swiftly and accurately extract potential danger target information in power channels. It offers functionalities such as simulated working condition early warning analysis, powerline completion acceptance, fine inspection route planning, and substation inspection route planning, all aimed at ensuring the safe operation of power systems.

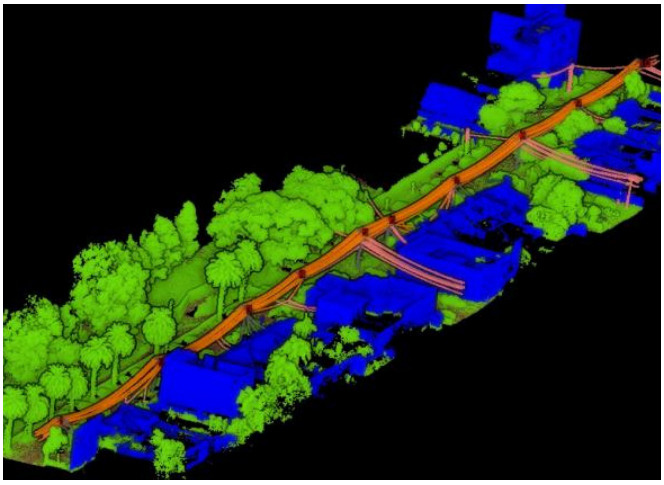
Product Advantages

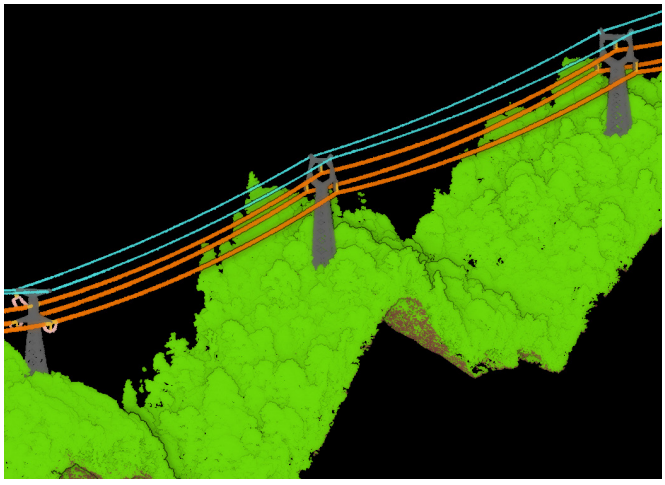
TB-level LiDAR Point Cloud Data Processing and Analysis

- Supports loading of greater than 1000 tower raw point cloud data without sparse extraction.
- High processing and analysis efficiency, capable of achieving 300 km of data per person per day on the main grid.

AI-based Point Cloud Classification

- One-click automatic classification of categories including towers, conductors, shield lines, insulators, drainage threads, scissors crossing lines, ground points, vegetation, buildings, roads, and water.
- High classification efficiency with accuracy up to 95%.





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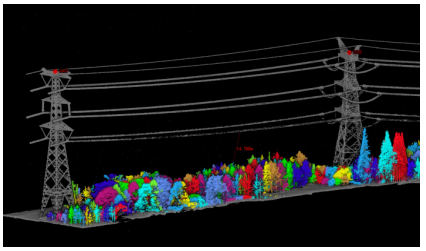
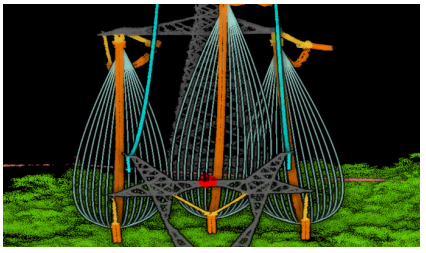


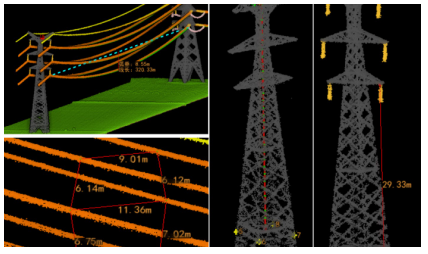
Comprehensive Analysis of Trees in Power Channels

- Supports individual tree segmentation within power channels, accurately calculating deforestation areas.
- Quickly detect the number, location, height, crown width, and other information of dangerous trees.
- Generates reports on tree height and density distribution within channels.



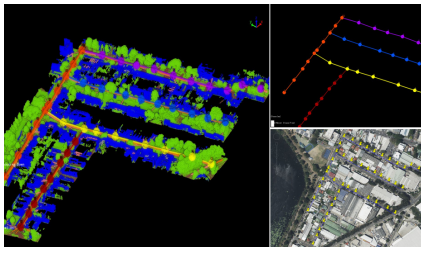
Simulated Working Conditions and Scientific Warning

- Batch vectorization of power lines.
- Simulation analysis of tree fall and growth.
- Comprehensive simulation of high temperatures, ice covering, and strong winds.



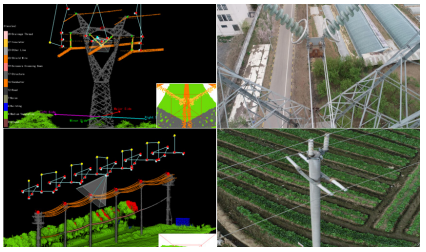
Completion Acceptance of Power Lines

- Provides analysis functions including sag, phase spacing, electrical clearance of drainage threads, spacing between conductors and shield lines, tower inclination, cross-arm height difference, nominal height, and tower diaphragm of towers.
- Automatically generates analysis reports.



Distribution Network Tower Management

- Manage distribution network towers by hierarchy.
- Automatic extraction of tower points.
- Batch generation of tower information ledger (KML) , with support for importing into Google Earth.



Fine Inspection

- AI automatically recognizes component points.
- Batch generation of main and distribution network tower inspections, powerline inspections, and channel inspections and other types of routes.
- Automatic safety optimization of routes.

Substation Inspection

- Support import or create component ledger.
- Automatically generate safe obstacle avoidance routes.
- Supports route planning based on 3DGS data.

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