

VRMesh v7.0

3D Point cloud and mesh processing software

Welcome! VRMesh is an advanced 3D point cloud and mesh processing software tool. Our innovative technologies are aimed to provide powerful, easy, and affordable solutions for engineering industries. The entire family of VRMesh consists of four packages targeted to different customers.

VRMesh Family:

- **VRMesh Survey:** An automatic point cloud classification and feature extraction solution for airborne and mobile LiDAR.
- **VRMesh Reverse:** A complete reverse engineering workflow for users to wrap point cloud data into accurate polygon meshes as well as NURBS surfaces.
- **VRMesh Design:** A powerful mesh repair/editing and free form modeling package dedicated for 3D printing industry.
- **VRMesh Studio:** A comprehensive point cloud processing, and mesh modeling environment for industry users requiring engineering tools and design communication in one package.

Why Choose VRMesh:

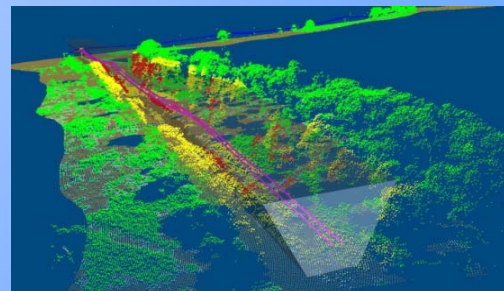
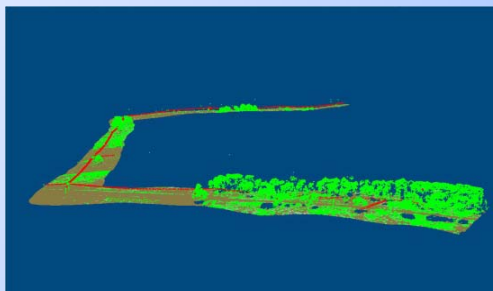
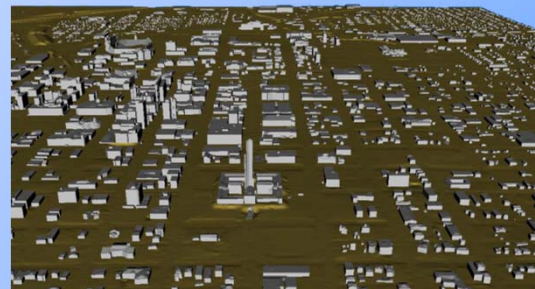
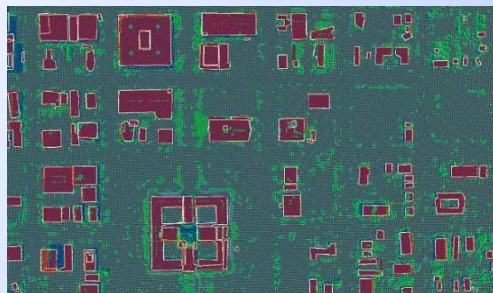
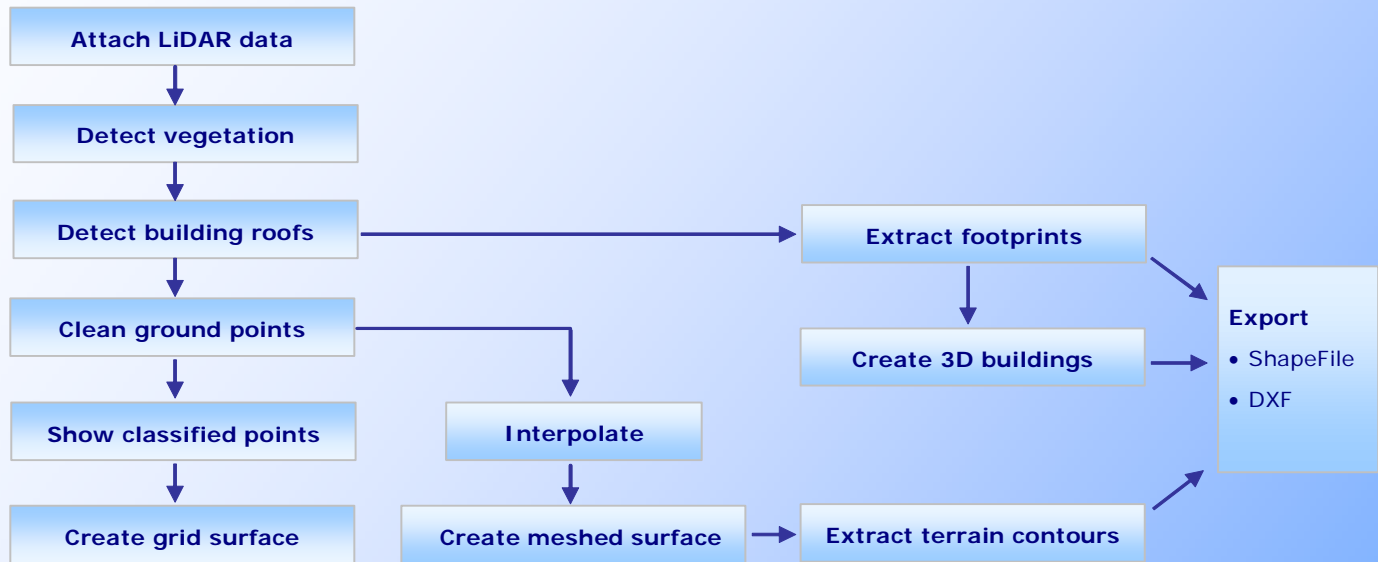
- Handle large data of up to 1 billion points.
- Classify LiDAR point clouds with high accuracy.
- Extract building footprints and create 3D buildings in one click.
- Provide powerline detection and clearance analysis tools.
- Advanced point cloud decimation and denoising algorithms.
- Accurate point cloud triangulation and registration.
- Advanced STL repair and editing.
- Quads and NURBS creation.

Feature Comparison:

VRMesh Feature Comparison	Survey	Reverse	Design	Studio
LIDAR Point Cloud Classification toolset	★			★
Point Cloud Clean-up toolset	★	★		★
Triangulation / Registration	★	★		★
Mesh Repair / Editing	★	★	★	★
Digital Clay	★	★	★	★
Quads & NURBS Creation		★		★
Smart Form		★	★	★
Inspection & Measurement	★	★	★	★

VRMesh Survey

A next-generation solution for automatic point cloud classification and feature extraction. It automatically extracts vegetation, buildings, and ground points from airborne and mobile LiDAR data. 99% classification jobs can be automatically done with high accuracy. It allows you to extract building footprints and create 3D buildings in one click. It has the ability to detect powerline and conduct clearance analysis. It also provides comprehensive functionalities to generate accurate triangle meshes.

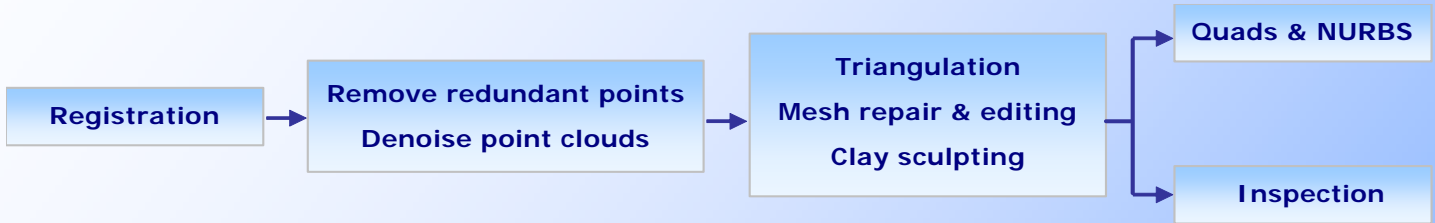


File I/O Formats

- Import: vrg, stl, ply, txt, asc, xyz, las, ptx, pts, pcp, dxf, shp, obj, 3ds, wrl, byu, vtk, tif, jpg, png
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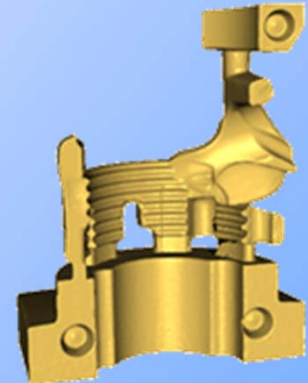
VRMesh Reverse

A complete reverse engineering workflow for users to wrap point cloud data into accurate polygon meshes as well as NURBS surfaces. It delivers best-in-class point cloud clean-up tools and mesh processing functionalities. It also provides step-by-step guides to wireframe curve detection and NURBS surface creation.



Features and Benefits

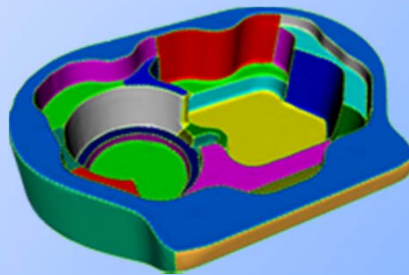
- Automatic registration.
- Remove redundant points with preservation of edges.
- Advanced point cloud denoising algorithm.
- Accurate triangulation.
- Remesh smoothing with preservation of edges.
- Comprehensive mesh repair and editing functionalities.
- Digital clay working directly on arbitrary triangle meshes.
- Quads and NURBS surface creation.
- Sketch-based modeling techniques.



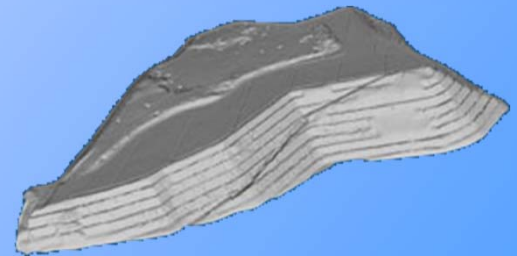
Automatic & Accurate
Triangulation



Automatic Multiple Scan
Registration & Merging



NURBS Creation



Volume Calculation

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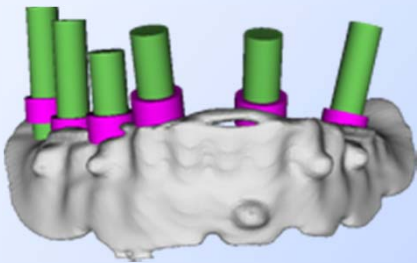
VRMesh Design

A powerful mesh repair & editing and free form modeling software dedicated for 3D printing industry. It provides industry-proven workflows for dental implant planning, shoe insole design, etc.

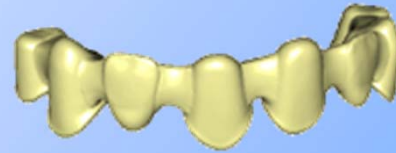
Features and Benefits

- Automatic error analyzing and fixing.
- Intelligent hole filling.
- Advanced Boolean operations.
- Remesh smoothing with preservation of edges.
- Comprehensive editing tools: offset, fillet, extrude, clip, label...
- Digital clay working directly on arbitrary triangle meshes.
- Sketch-based modeling techniques.

Working Examples:



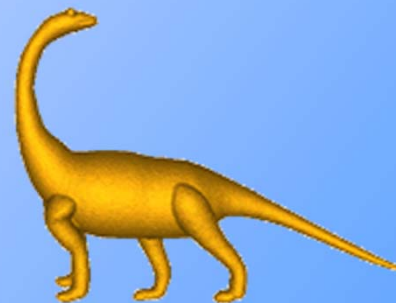
Drill Guide Design



Guaranteed Watertight Polygon



Feature-Preserving Remesh Smoothing



Fast Design from Sketch

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