3D Surface Reconstruction using Delaunay Triangulation

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ABSTRACT

3D meshing algorithms serve to create surfaces between point clouds that act as sets of particles of an object or environment. There are many approaches ranging from geometric and volumetric methods. Both of various complexity and accuracy. While some methods will use data additional to position such as surface normal information, the Delaunay Triangulation method aims to create surfaces for unstructured point clouds. In contrast to the popular standard of implementing this for 2D spaces, a new design is presented for 3D space using a Microsoft Kinect depth camera for input.
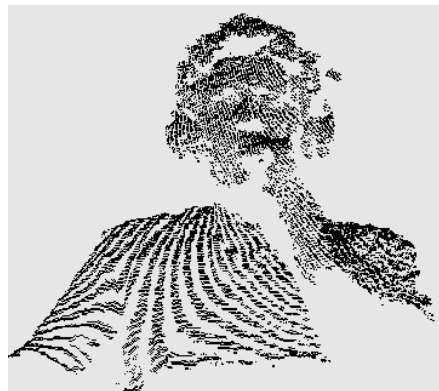
Figure 1. A human point cloud captured by the Microsoft Kinect