

svd from linearalgebra

ElementSets from MeshConnectivity

VertexOneRing from PointCloudNeighborhoods( $M$ )

$M$ : PointCloud

$$x_i \in \mathbb{R}^3$$

$$V, E = \textit{ElementSets}(M)$$

$$\textit{Normal}(v) = vv_{*,3}$$

where

$$v \in V$$

$$N = \textit{VertexOneRing}(v)$$

$$\bar{p} = \frac{\sum_{n \in N} x_n}{|N|}$$

$$d = \{x_v - \bar{p} \mid v \in N\}$$

$$m_{i,*} = d_i$$

$$u, \sum, vv = \textit{svd}(m)$$