Introduction

Currently, there are many algorithm has been purposed for the surface reconstruction of Manifold and Non-Manifold surfaces from the point cloud data even in high dimensions. Apart from surface reconstruction some algorithm has been also purposed for finding Topological Invariant in the surfaces like holes, connected components and cavities.

Application And Work done by various done

.name proposed K- Laplacian spectrum method to find higher topological invariant, hole based on persistent homology. They applied method to the metabolic network based on FDG-PET data of Alzheimer Disease (AD), mild cognitive impairment (MCI) and normal control (NC) groups. They were successful in finding the persistence of hole in Alzheimer Disease.

.name proposed a framework for reconstructing lightweight polygonal surfcae from point cloud based on hypothesizing and selection strategy with help of binary linear programming formula.

. name presented an algorithm capable of reconstructing a non-manifold surface embedded as a point cloud in a high-dimensional space. They modified freeman triangulation theorem for using that for any type of non-manifold surface.

Work Done By Us

With objective of finding topological invariant in shapes along with forming their point cloud, we have done some work toward constructing point cloud of some given shapes with help of their parametric coordinates. We are able to find topological invariant of shapes by having their domain’s specifications.