

Project Proposal

Hai Yu

In the beginning, we need to understand the meaning of triangulation. In Algebraic Topology, the triangulation is to cut the graph into pieces such that every piece can be connected as a triangle. Meanwhile, every two triangles must either not intersect or intersect in only one edge. The project will be research and discuss the problem of Minimum Weight Triangulation. This problem mainly want to know whether there is a minimum weight triangulation of a planar point set be found in polynomial time or not. The weight of a triangulation is its total edge length. We will discuss the realistic meaning and the development of this problem. Since this problem has been solved, we will also discuss the solution and proof in detail. After that, we will give an approximate way to solve the problem.