Yuanyuan Peng

108 734 720

AMS 545 Project

Project

(5). Implement and experiment with Timothy Chan's convex hull algorithm (O(nlogh)) in 2D. Ideally, show an animation of the algorithm to help make it clear how it works.

Language

Java

Project Plan

1) Implement the Chan's algorithms with the pseudocode in the slide.
    a. Separate the points into $\frac{n}{m}$ groups, find the convex hull for each group.
    b. Then find the convex hull of all the convex hull we just found

2) Test the program with keyboard/file input
    a. First test with $m = 3,4,5,6, \ldots$, see if the program can find convex hull of a group of points.
    b. Test if the program works on finding the convex hull of the m-gons (triangles for $m = 3$)

3) Implement the UI
    a. Test (2) a with the UI first
    b. Then test (2) b with the implemented UI
4) Implement the animation
    a. Test (2) a with animation
    b. Then test (2) b with the implemented animation
5) Write the project report