History of polygon triangulation algorithms:

- 1978. First $O(n \log n)$ algorithm. Garey, Johnson, Preparata, Tarjan.

- 1984. Simpler. Fournier and Montuno. — this is what we’ll study

- ... $O(n \log \log n)$ ... $O(n \log^* n)$ ...

- 1991. $O(n)$ algorithm. Chazelle. But it is too complicated to implement. (Uses polygon-cutting theorem, planar separator theorem, but no fancy data structures.)

We will also study an $O(n \log^* n)$ randomized algorithm of Seidel.
Optimal algorithm to triangulate a polygon $O(n)$

Bernard Chazelle 1991

Triangulating a simple polygon in linear time
B Chazelle - Discrete & Computational Geometry, 1991 - Springer
Abstract. We give a deterministic algorithm for triangulating a simple polygon in linear time. The basic strategy is to build a coarse approximation of a triangulation in a bottom-up phase and then use the information computed along the way to refine the triangulation in a top- ...
Cited by 840
From: google scholar

But so complicated that there’s no implementation!
References


Seidel's paper [http://dx.doi.org/10.1016/0925-7721(91)90012-4](http://dx.doi.org/10.1016/0925-7721(91)90012-4)