Efficient Convex Hull Algorithms in 2D and 3D based on the Idea of the Method of Orienting Curves

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Abstract: This paper presents some efficient convex hull algorithms for finite point sets in 2D and 3D based on the idea of the Method of Orienting Curves (introduced by Phu in *Optimization*, **18** (1987) pp. 65-81, for solving optimal control problems with state constraints). The actual run times on the set of random points (in uniform distribution) show that our algorithms run significantly faster than the Graham algorithm and the gift-wrapping algorithm.

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