

Adaptive Algorithms for Points Searching and Sorting

David Podgorelec

Laboratory for Geometric Modelling and Multimedia Algorithms (Gemma)
Faculty of Electrical Engineering and Computer Science, University of Maribor,
SI-2000 Maribor, Slovenia
<http://gemma.uni-mb.si/>

Abstract:

Three topics, recently investigated by the author are considered in this presentation. In the first part, an incremental nearest point search algorithm based on evenly populated strips is described. The algorithm is much less affected by differences in point distributions than the previous practical solutions proposed by the Gemma lab researchers. The second topic addresses adaptive geometric data sorting. An original, linear time inplace merging is proposed and integrated into the smart mergesort algorithm. The third topic is about repeated sorting of the distances between the set of static points and the moving reference point.

Keywords: Incremental nearest point problem; Inplace merging; Smart mergesort