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MADALGO seminar by Nodari Sitchinava, Aarhus University

Computational Geometry in the PEM model

Abstract:

We study the computational geometry problems in the parallel external memory (PEM) model. PEM is a parallel version of the external memory model of Aggarwal and Vitter. We solve the problems for 2-d dominance counting, 3-d maxima, visibility from a point and 2-d convex hull using simple techniques of the PEM model. We also introduce a parallel version of the distribution sweeping technique, which we use to solve output-sensitive problems, such as orthogonal line segment intersection reporting, batched range searching and other related problems.

Joint work with: Deepak Ajwani and Norbert Zeh