VCU Discrete Mathematics Seminar

Estimating L1-Norm Best-Fit Subspaces

Prof Paul Brooks
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Wednesday, Sept. 14
1:00-1:50
4145 Harris Hall

The best-fit subspace problem may be viewed as a generalization of the classic Fermat-Torricelli problem regarding the location of points in the plane. Best-fit subspaces form the basis for important problems in statistical learning and location theory.

We will discuss results regarding L1-norm best-fit hyperplanes and lines. Though the objective function is nonlinear, non-convex, and non-differentiable, the L1-norm best-fit hyperplane problem can be solved to global optimality by solving a series of linear programs.

We also propose a method for estimating the L1-norm best-fit line. The results can be used for robust principal component analysis and facility location.

This is joint work with Jose Dula.

For the Fall 2016 DM seminar schedule, see:

http://www.people.vcu.edu/~clarson/discrete-seminar-fall-2016.html