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Title: Networks and computational geometry – new results and future directions

Abstract:

There is an intrinsic connection between computational geometry and networking. In this talk I will describe theoretical results in computational geometry with practical implications in networking. More specifically, I will first present a new construction of geometric spanners that allows optimal routing between points in the plane. In the second part of the talk I will describe the first construction ever of a disk graph spanner. The practical importance of the later is enormous as it can serve as a topology for ad-hoc networks whose nodes have a *variable* transmission range.

The talk is based on the following papers:

1. Improved Algorithms for Fully Dynamic Geometric Spanners

Lee-Ad Gottlieb (NYU) and Liam Roditty

2. Spanners for Ad Hoc Networks with Variable Transmission Range

David Peleg (Weizmann) and Liam Roditty