

Lecturer: Daniel Freedman
Computer Science Department, Rensselaer Polytechnic Institute

Title: Manifold Reconstruction, Quantitative Homology, PDEs, Graph Cuts: Some Recent Results in Computer Vision and Computational Geometry

Abstract:

In this talk, I will give an overview of several recent results of mine in computer vision and computational geometry. Within the realm of computer vision, I will focus on applications of partial differential equations (curve and surface flows) and combinatorial optimization to segmentation, tracking, and optical flow. Within computational geometry, I will discuss results on manifold reconstruction from unorganized points, as well as computational algebraic topology, in particular the measurement of homology. These results may be applied to the study of shape.