ANDREA BERTOZZI, University of California, Los Angeles
Geometric graph-based methods for high dimensional data

I will talk about a new class of problems in machine learning: segmenting large datasets using penalized graph cuts. One class of methods is based on interface models in Partial Differential Equations such as motion by mean curvature, the Allen-Cahn equation, and the MBO scheme, which already have been used for low dimensional image processing problems. Instead we consider large discrete datasets with a similarity graph connecting the discrete pieces of information. I will review both analytical results for these discrete problems, such as Gamma convergence, and show the behavior of the methods on real datasets.