# IV. Shape Reconstruction

13 Near neighbor graphs
14 Two-dimensional alpha shapes
15 Restricted Delaunay triangulations
16 Crust

This chapter describes various ideas and concepts related to the question of shape reconstruction in two dimensions. The input to the motivating problem is a finite set of points in the plane, and the task is the construction or reconstruction of the shape from which this set is sampled. In an important special case the points are sampled from a smooth curve. Section 13 describes various geometric graphs useful in reconstructing a curve. Section 14 studies two-dimensional alpha shapes. Section 15 introduces the idea of restricted Delaunay triangulations, which underlies many of the reconstruction methods suggested in the computational geometry literature. One such method is the crust algorithm explained in Section 16.