**Abstract of the Talk**

In this talk, I will show how some computer vision problems can be elegantly modelled as graph problems and hence solved using graph theoretic approaches. Three different problems from diverse domains are chosen. The first problem is key frame based video summarization in multimedia analysis. This is casted as one of finding connected components in a Delaunay graph. The second problem is on tracking of human monocytes in microscopic video. This is designed as a problem of finding correct matches in bipartite graphs. The third problem deals with segmentation of kidneys from extremely low contrast MRI data. This is represented as a problem of finding a min-cut in a weighted undirected graph. The energy function of the classical graph cut is made more informative using pixel labelling via shortest paths.