With the incidence of liver cancer on the rise worldwide, researchers are working to develop automatic segmentation algorithms to aid medical experts in the detection and treatment process. However, there are many challenging aspects to this task, such as the low-contrast nature of the images, the wide variety of tumor shapes and volumes, and even the variety of liver size and structure. In this talk, we briefly survey the main methods found in the literature, such as active contour, level set, graph cut, thresholding, region growing, and neural nets, so as to provide a concise introduction for new researchers or a short review for experienced image analysts. (Received September 25, 2018)