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## Segmentation of Tumors from Lung CT Images Using Random Walker and Watershed Algorithms

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**Abstract :** A method for detection and classification, to distinguish cancerous tumor from the CT scan images is presented. The cancer detection scheme consists of four stages. They are preprocessing, segmentation, feature extraction and classification. Segmentation of the lungs in chest-computed tomography (CT) is performed as a preprocessing step in lung imaging usually. Using the random walk algorithm, given a set of user-defined (pre-labeled) pixels as labels, the probability of walking from each unlabeled pixel to each labeled pixel is calculated and a vector of probabilities for each of the unlabeled pixels is defined. By combining this vector of probabilities obtained for each unlabeled pixel, they can be assigned to one of the labels using the watershed algorithm to obtain tumor segmentation.