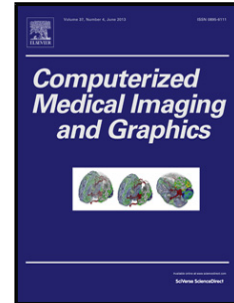


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The Matching Method for Veins Images.

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Highlights

- The proposed algorithm for matching subcutaneous blood vessels enables to create a 3D model.
- The algorithm can be used in intra-operative navigation systems or injection stations.
- The algorithm matches images based on the idea of minimum distance and control of the distance between adjacent points.

Owing to the anatomically conditioned small number of veins that can be found in a single image, the algorithm is characterized by a very short running time.

Abstract

Background: A common problem in medical practice is the localization of subcutaneous veins and arteries. Automatization of this procedure may help to develop bloodbot rigs and improve use of image guided surgery.

Method: It is not necessary to have a full 3D model in order to determine their location by calculating the spatial coordinates of veins axes in the adopted coordinate system. A much better solution is pre-segmentation, which provides veins axes, and further search for stereo correspondence in the segmented images. The computational complexity of this approach is much

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