Fakultät für Medizin

Dokumenttyp: journal article

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Titel des Beitrags: Disocclusion-based 2D-3D registration for aortic interventions.

Abstract: Occlusions introduced by medical instruments affect the accuracy and robustness of existing intensity-based medical image registration algorithms. In this paper, we present disocclusion-based 2D-3D registration handling occlusion and dissimilarity during registration. Therefore, we introduce two disocclusion techniques, Spline Interpolation and Stent-editing, and two robust similarity measures, Huber and Tukey Gradient Correlation. Our techniques are validated on synthetic and real interventional data and compared with well-known approaches. Results prove that an integration of disocclusion into the registration procedure yield higher accuracy and robustness. It is also shown that the robust measures have different effects depending on the type of occluding structure.

Zeitschriftentitel / Abkürzung: Comput Biol Med

Jahr: 2013

Band: 43

Heft / Issue: 4

Seiten: 312-22

Sprache: eng
