Fast Elastic Registration of Soft Tissues under Large Deformations

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PII: S1361-8415(17)30188-3
DOI: 10.1016/j.media.2017.12.006
Reference: MEDIMA 1326

To appear in: *Medical Image Analysis*

Received date: 9 December 2016
Revised date: 7 December 2017
Accepted date: 7 December 2017

Please cite this article as: Igor Peterlík, Hadrien Courtecuisse, Robert Rohling, Purang Abolmaesumi, Christopher Nguan, Stéphane Cotin, Septimiu Salcudean, Fast Elastic Registration of Soft Tissues under Large Deformations, *Medical Image Analysis* (2017), doi: 10.1016/j.media.2017.12.006

Highlights

- A surface-matching model-based method of deformable registration is proposed.
- A validation on semi-synthetic data obtained by simulation and filtering is presented.
- A validation on nine pairs of real human data is described, based on features extracted from tissue vascularization.
- The evaluation shows that the registration compensates large deformations, reducing the initial error from >40mm to <10mm
- The parametrization of the method are studied and discussed. The proposed method is compared an intensity-based registration.