

Accepted Manuscript

Enhanced Particle-filtering Framework for Vessel Segmentation and Tracking

Sang-Hoon Lee, Jiwoo Kang, Sanghoon Lee

PII: S0169-2607(16)30575-2
DOI: [10.1016/j.cmpb.2017.06.017](https://doi.org/10.1016/j.cmpb.2017.06.017)
Reference: COMM 4446



To appear in: *Computer Methods and Programs in Biomedicine*

Received date: 2 June 2016
Revised date: 25 May 2017
Accepted date: 23 June 2017

Please cite this article as: Sang-Hoon Lee, Jiwoo Kang, Sanghoon Lee, Enhanced Particle-filtering Framework for Vessel Segmentation and Tracking, *Computer Methods and Programs in Biomedicine* (2017), doi: [10.1016/j.cmpb.2017.06.017](https://doi.org/10.1016/j.cmpb.2017.06.017)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Highlights

- In this paper, we propose a robust vessel segmentation and tracking method that is based on a particle filtering framework.
- To enhance the segmentation and tracking performance, the importance density of the particle filter is localized by estimating the translation of an object's boundary.
- To minimize problems of degeneracy and sample impoverishment in the particle filter, a newly proposed weighting policy is investigated, which is used to update of particle's weight with the goal of attaining a higher level of accuracy.
- Compared with the existing method, the proposed algorithm exhibited better performance in terms of segmentation and tracking.
- In particular, for a limited number of iterations, the performance difference between the two algorithms increased.
- Moreover, the proposed method demonstrated a tendency toward lower degeneracy and sample impoverishment.

Download English Version:

<https://daneshyari.com/en/article/4958058>

Download Persian Version:

<https://daneshyari.com/article/4958058>

[Daneshyari.com](https://daneshyari.com)