

Call for Book Chapters



Hybrid Soft Computing for Image Segmentation

Editors

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Important Dates

Proposal Submission: 15th November 2015

Notification of Acceptance of Proposals: 30th November 2015

Full Chapter Submission: 29th February 2016

Chapter Review Notification: 15th April 2016

Final Version Due: 15th June 2016

Final Notification: 15th July 2016

Final Revised Chapter Due: 15th August 2016

Final Acceptance: 30th August 2016

Purpose

The field of image segmentation has assumed paramount importance in the computer vision research community given the vast amount of uncertainty involved therein. Proper segmentation of real life images plays a key role in many real life applications. Traditional applications include image processing, image mining, video surveillance, intelligent transportation systems to name a few.

With the shortcoming and limitation of classical platforms of computation, particularly for handling uncertainty and imprecision prevalent in the challenging thoroughfare of image processing, Soft Computing as an alternative and extended computation paradigm has been making its presence felt. Accordingly, a phenomenal growth of research initiative in this field is quite evident. Soft Computing techniques include (i) the elements of *fuzzy mathematics*, primarily used for handling various real life problems engrossed with uncertainty, (ii) the ingredients of *artificial neural networks*, usually applied for cognition, learning and subsequent recognition by machine inducing thereby the flavor of

intelligence in a machine through the process of its learning and (iii) components of *evolutionary computation* mainly used for search, exploration, efficient exploitation of contextual information and knowledge useful for optimization.

These techniques individually have got their points of strength as well as of limitation. On the several real life contexts it is being observed that they play supplementary role to one another. Naturally, this has given rise to serious research initiative for exploring avenues of hybridization of the above mentioned soft computing techniques. This has given rise to more robust and intelligent solutions in the form of *neuro-fuzzy*, *fuzzy-genetic*, *rough-neuro*, *rough-fuzzy*, *neuro-fuzzy-genetic*, *neuro-fuzzy-rough*, *quantum-neuro-fuzzy* architectures. Interestingly the scope of such hybridization is gradually being found all encompassing.

Description and Scope of the Book

The editors of the present treatise aim at bringing out some latest findings in the field of Hybrid Soft Computing applied to proper segmentation of images.

The book will be useful for the graduate students and researchers in computer science, electronics communication engineering, electrical engineering, and information technology as a reference book and as an advanced text book for some parts of the curriculum.

Recommended Topics:

This book solicits contributions that also include the basics, fundamentals of the **hybrid soft computing paradigm** applied to image segmentation supported by practical examples and case studies. Each chapter is expected to cover an **in-depth analysis** of real life applications of hybrid soft computing paradigm to image segmentation supplemented by **coding examples** of the real life problems dealt with.

Submissions are solicited on the following topics, but not limited to:

- Gray Level Image Segmentation
- Color Image Segmentation
- Medical Image Segmentation
- Remote Sensing Image Segmentation
- Threshold Based Image Segmentation
- Video Segmentation
- Applications of Image Segmentation in
 - Content-based image retrieval
 - Machine vision
 - Medical imaging
 - Locate tumors and other pathologies
 - Measure tissue volumes
 - Diagnosis, study of anatomical structure
 - Surgery planning
 - Virtual surgery simulation
 - Intra-surgery navigation

- Object detection
 - Pedestrian detection
 - Face detection
 - Brake light detection
 - Locating objects in satellite images (roads, forests, crops, etc.)
- Recognition Tasks
 - Face recognition
 - Character recognition
 - Fingerprint recognition
 - Iris recognition
- Traffic control systems
- Video surveillance

Submission Deadlines

The book is to be published by **Springer International Publishing AG, Cham, Switzerland**. It is expected to be published in 2017.

PROPOSAL SUBMISSION: Prospective authors should submit a 2-3 page proposal by **15th November 2015** clearly explaining the mission and concerns of the proposed chapter. Authors will be notified by **30th November 2015** about the status of their proposals.

FULL CHAPTER SUBMISSION: Chapters have to be 20-25 pages length and will be reviewed by two/three expert reviewers to ensure the quality of the volume. The deadline of submission is **29th February 2016**.

CHAPTER REVIEW NOTIFICATION: Authors of submitted chapters will be notified by **15th April 2016** about their acceptance/rejection.

FINAL VERSION DUE: Camera-ready version of the accepted chapters is expected to be submitted by **15th June 2016**.

FINAL NOTIFICATION: A second round of review of the chapters along with plagiarism check will be carried out and the authors of the accepted chapters will be notified on **15th July 2016**.

FINAL REVISED CHAPTER DUE: Camera-ready version of the accepted chapters incorporating revisions (if any) is expected to be submitted by **15th August 2016**.

FINAL ACCEPTANCE: The final acceptance notification of the chapters will be sent to the contributing authors by **30th August 2016**.

Inquiries and submissions can be forwarded to:

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