

## **Proposal**

### **Special Session on Computational Intelligence for Medical Image Processing**

**IEEE SSCI- 2018**

**Title:** Computational Intelligence for Medical Image Processing

**Name of Orgnizers:** Dr. Pradnya Kulkarni

Prof. Andrew Stranieri

Prof. Herbert Jelinek

#### **Aims and Scope:**

In clinical practice, one of the important aspects in the accurate medical diagnosis is the interpretation of medical images (e.g. radiology, pathology). The special session on ‘Computational Intelligence for Medical Image Processing’ is planned for the IEEE Symposium Series on Computational Intelligence - 2018 (<http://www.ieee-ssci2018.org>) to be held in Bangaluru, India.

This session aims to bring together computational intelligence and pattern recognition researchers to discuss latest progress in the area of medical image analysis, emphasize new research questions and collaborate for promising future research direction.

#### **Topics:**

The special session will seek original and unpublished research work on following topics related to Medical Image Processing but not limited to:

- Image Registration
- Image Pre-processing
- Image Classification and Retrieval
- Image Segmentation
- Image Compression
- Image Recognition
- Pattern Recognition
- Pathology Detection
- Deep Learning

**Name, affiliation, email Ids of all the organizers**

**Dr. Pradnya Kulkarni**

MIT World Peace University, Pune

[pradnya.kulkarni@mitwpu.edu.in](mailto:pradnya.kulkarni@mitwpu.edu.in)

**Prof. Andrew Stranieri**

Federation University, Ballarat, Australia

[a.stranieri@federation.edu.au](mailto:a.stranieri@federation.edu.au)

**Prof. Herbert Jelinek**

Chales Sturt Univerisity, Albury, Australia

[HJelinek@csu.edu.au](mailto:HJelinek@csu.edu.au)

**Important Dates: 20/21 Nov 2018**

**Paper submission:**

Please submit only full papers (not abstracts) of no more than 8 pages (including figures, tables and bibliography), in two-column format (written in English, PDF format) using any of the templates given below

[http://www.ieee.org/conferences\\_events/conferences/publishing/templates.html](http://www.ieee.org/conferences_events/conferences/publishing/templates.html)

List of potential contributors

| Author(s)               | Affiliation, Country                         | Tentative paper title                             |
|-------------------------|--|---|
| Dr. Ankush Mittal.      | Graphic Era University                       | Feature Extraction from compressed medical images |
| Kanchan Kashyap         | Research Scholar, IIT Jabalpur, India        | Mammographic Images                               |
| Nidhi Gupta             | IIT Jabalpur India                           | Brain MRI segmentation                            |
| Assist Prof Julie Zhang | East West University, Chicago USA            | ROI Segmentation                                  |
| Dr. Sanjay Shitole      | IIT Mumbai, India                            | Deep Learning for medical images                  |
| Dr. Shaikh Fattah       | Bangladesh University of Engg and Technology | Endoscopic Image Classification                   |

|                      |  |   |
|----------------------|--|---|
| Mahdi Zarei          | University of California San Francisco | Brain MRI Segmentation and Analysis           |
| Prof. David Zhang    | Hongkong polytechnic university        | 3D Iris Image feature extraction and matching |
| Dr. Pradnya Kulkarni | MIT World Peace University             | Diabetic Retinopathy Classification           |

### **Biography of all the organizers**

**Dr. Pradnya Kulkarni** is currently working at MIT World Peace University, Pune, India. She has completed her PhD from Centre for Informatics and Applied Optimization, Federation University, Australia. She possesses twelve years of international experience (India, Australia and Canada) in teaching, research and software development. She is honorary research fellow of Federation University, Australia. She received the Federation Postgraduate Research Scholarship for her PhD project. She won Most Outstanding Paper Award at UB Research conference 2013 and Best Presentation Award at IEEE International Conference on Signal and Image Processing 2016. She has published 15 research papers in international conferences and reputed journals and a Book Chapter. She has served as a Reviewer/Program Committee Member as well as Editorial Board Member for several International Conferences and Journals. Her research interests include Medical Image Processing, Health Informatics, and Artificial Intelligence.

**Professor Andrew Stranieri** is the leader of the Health Informatics Laboratory within the Centre for Informatics and Applied Optimisation at Federation University Australia (Ballarat). His research in combining argumentation theory with machine learning led to a new approach for modelling discretionary reasoning in law and resulted in commercial decision support systems. This formed the basis of approaches to support group reasoning. Currently, he is involved with research in health informatics in data mining, decision support, complementary medicine informatics and telemedicine. He is the author of over 120 peer reviewed articles and has published three books.

He is a recipient of many grants (ARC, VPAC, IBM) for various projects and has supervised around 20 PhD students, and several Masters and Honours students. He was invited as keynote speakers for many conferences. He also served as the Managing Director of JustSys Pty Ltd.

**Prof. Herbert Jelinek** graduated in Human Genetics (Honours) from UNSW, Sydney and received a GradDip(Neurosci) from ANU (Canberra) followed by a PhD (University of Sydney ). His research is in diabetes and diabetic complications focusing on strategies for automated identification of cognitive, cardiac, peripheral vascular and retinal complications using biosignal and image processing. He has established a one stop screening unit for diabetes and cardiovascular disease at Charles Sturt University, Albury.

Currently Dr Jelinek has an adjunct position as clinical associate professor at the Australian School of Advanced Medicine, Macquarie University and The Rural Clinical School, University of New South Wales in Sydney, Australia as well as being an honorary senior research fellow with the Centre for Informatics and Optimization at Federation University, Ballarat, Australia.