Session Title: Computational Intelligence in Medical Imaging

Aim and Scope:

With the ever-growing demands on the healthcare system on a global scale, deep learning has become increasingly prevalent and seen as a crucial tool for not only improving the quality of care (increasing clinical decision and treatment accuracy and consistency) but also greatly improve the efficiency of care, allowing more patients to be assessed and treated.This session aims to present recent advances in medical image processing using deep learning (e.g., convolutional neural networks, auto encoders, generative adversarial networks, capsule networks, deep belief networks) and computational intelligence (e.g., multilayer perceptron, neuro-fuzzy, genetic algorithms). The objective of this special session is to advance scientific research of computational intelligence in medical image analysis. The session is going to foster the debate within the clinical domain of the most important breakthroughs in artificial intelligence techniques applied to medical imaging, boosting emerging trans-disciplinary fields such as computational radiology and computational pathology.

Subtopics:

- Artificial Intelligence and Deep Learning for Computational Pathology and Radiology
- Medical Image acquisition and Enhancement
- Segmentation and Classification of Medical Images
- Anatomy Detection and Recognition in Medical Imaging
- Detection and Discovery of Predictive and Prognostic Tissue Biomarkers
- Medical Image Reconstruction and Super-Resolution
- Deep learning for clinical diagnosis
- Data-driven biomarker discovery from medical imaging data for a disease with deep neural networks
- Medical image reconstruction using deep neural networks

A wide range of medical image modalities are of interest: Fundus Imaging ,OCT, MRI, US, PET, microscopic images, mammogramsimages, histological, among others.

Session Chair:

Dr. Surya Narayan Panda

Director (Research)

Chitkara University Institute of Engineering and Technology

Ms. Dimple Nagpal

Assistant Professor (Research)

Chitkara University Institute of Engineering and Technology

Technical Programme Committee:

1. Dr. Sachin Ahuja, Professor, Chitkara University, Punjab.
2. Dr. Vinay Kukreja, Associate Professor, Chitkara University, Punjab.
3. Dr. Amitoj Singh,Assistant Professor, Maharaja Ranjit Singh Punjab Technical University, Bathinda, Punjab.
4. Dr. Vikram Singh, Professor, Ch. Devi Lal University, Sirsa.
5. Dr. Himanshu Aggarwal,Professor,Punjabi University,Patiala.
6. Dr. Vidhu Baggan, Associate Professor,Chitkara University, Punjab
7. Dr. P.K. Pattanaik,Professor, KIIT University, Bhubaneshwar.
8. Dr. Naveen Kumar, Assistant Professor, Chitkara University, Punjab.
9. Dr. Rajesh Kumar Kaushal, Assistant Professor, Chitkara University, Punjab.
10. Dr. Kalpna Guleria,Associate Professor,Chitkara University,Punjab.