



Big Data and Deep Learning in Healthcare

IEEE SPS Winter School 2018 / 2019

Asia Pacific University (APU)
Kuala Lumpur, Malaysia

12-16 November 2018

Register by 30 October 2018

<http://sps.ieeemy.org/winter2018/>

Interest in biomedical imaging and healthcare research is growing worldwide. In most universities in Malaysia, there are research groups working in this very interesting and diversified field. Recently, Deep Learning and Big Data, two machine learning fields, have gained considerable attention from academia and IT communities, especially in relation to biomedical imaging and healthcare. This Winter School covers these two important topics and their applications in healthcare, delivered by prominent national and international speakers. This will be a follow up to our first IEEE SPS Winter School on *Recent Advances in Biomedical Imaging*, which was successfully organized in 2016.

TOPICS (TENTATIVE)

<ul style="list-style-type: none"> • Introduction to Deep Learning • Deep Learning for Image Processing • Deep Learning in Medical Imaging Applications • Best Practices for Training and Validating Deep Neural Networks • Deep Convolutional and Recurrent Neural Networks • Advances in Deep Learning Architectures 	<ul style="list-style-type: none"> • Introduction to Big Data • Big Data Usage and Impacts in Healthcare • Contextual Barriers to, and Facilitators of, Big Data Usage in Health and Wellness • Cloud Computing for Big Data- Implementation & Issues 	<ul style="list-style-type: none"> • Ethics in Healthcare Research • Writing Good Biomedical Articles • Meet the Doctors – What Kind of Research Will Really be Useful to Them? • Poster Session • Visit to National Cancer Institute
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The 5-day program will cover various aspects of the theory and applications in Deep Learning and Big Data, ranging from the introduction and concepts, to convolutional and recurrent neural networks, and advanced architectures. Other relevant topics in healthcare such as impacts, contextual barriers and facilitators of usage will also be discussed. Besides the regular lecture sessions, there will also be hands-on sessions for deep learning, a forum among the speakers and radiologists to discuss particular topics of interest, a session on biomedical research ethics as well as a visit to the National Cancer Institute in the administrative capital of Putrajaya. Poster sessions will be held during lunch time for participants to showcase their current work.

At the end of the School, participants will be exposed to the fundamental and advanced knowledge of Deep Learning and Big Data and their applications in healthcare. Participants would be able to create better solutions and explore greater perspectives in their domains of interest within this growing field of research.

REGISTRATION

Deadline for registration & payment: 30 October 2018.
Please register [here](#).

Fee Categories		Full (5 days)	Daily
Regular	IEEE SPS Members	RM 1600	RM 400
	IEEE Members	RM 2400	RM 600
	Non-Members	RM 3200	RM 800
Students	IEEE SPS Members	RM 800	RM 200
	IEEE Members	RM 1200	RM 300
	Non-Members	RM 1600	RM 400

ABSTRACT SUBMISSION FOR POSTER PRESENTATION

Prospective participants are invited to submit a one-page abstract of their work to be presented during the poster session. The selected presenters will receive a certificate of appreciation.

Abstract submission deadline is 24 October 2018. Please email your abstract to mypsoc@ieee.org

SPEAKERS

Kenji Suzuki (Tokyo Institute of Technology) Ph.D. is a tenured Associate Professor at Department of Electric and Computer Engineering and Medical Imaging Research Center, Illinois Institute of Technology. Since 2017, he has been jointly appointed in Institute of Innovative Research (IIR), Tokyo Institute of Technology, Japan, as Full Professor. He has published 320 and his papers have been cited 11,000 times. He has been studying deep learning in medical imaging and computer-aided diagnosis in the past 20 years. He has 30 patents including ones of earliest in deep-learning. He has been awarded 25 grants as PI, served as the Editor of a number of leading international journals, including Pattern Recognition and Medical Physics, organized 62 international conferences, given 110 invited talks and keynote speeches at international conferences and received 26 awards, including Springer-Nature EANM Most Cited Journal Paper Award 2016 and 2017 Albert Nelson Marquis Lifetime Achievement Award.



Chris Bain (Monash University) is the inaugural Professor of Practice in Digital Health in the Faculty of Information Technology. He leads the Digital Health work across the University. Chris is uniquely qualified in Australian healthcare, in Medicine, IT and IS, and has spent 27 years in operational healthcare in roles from clinician to manager to health informatics leader.

Fabrice Mériaudeau (University Teknologi Petronas) is a Professor at the Department of Computer & Information Sciences. He received his Masters degree in Physics as well as an Engineering Degree (FIRST) in material sciences at Dijon University, France. He also obtained a Ph.D. in image processing at the same university in 1997, and was a postdoc at The Oak Ridge National Laboratory. He served as the Director of the Le2i (UMR CNRS) from 2011-2016 and was the Vice President for International Affairs for the University of Burgundy from 2010-2012. His research interests are on image processing for non-conventional imaging systems and more recently on medical/biomedical imaging. He coordinated an Erasmus Mundus Master in Computer Vision and Robotics, and helped create a new Erasmus Mundus Master in Medical Imaging. He has authored more than 200 international publications and holds 4 patents.



Jinchang Ren (Strathclyde) received his PhD degree in Electronic Imaging and Media Communication from the University of Bradford, United Kingdom in 2009. Before that, he obtained DEng in Computer Vision, M.Eng. in Image Processing and Pattern Recognition and B. Eng. in Computer Software from Northwestern Polytechnical University (NWPUP), China, in 2000, 1997 and 1992, respectively. He is a Senior Member of the IEEE and Fellow of the Higher Education Academy, U.K. He has published over 160 peer-reviewed research papers in prestigious international journals and conferences, including over 90 in journals (70+ SCI cited, 20+ with IEEE). His research interests include: image processing and analysis, hyperspectral imaging, intelligent multimedia information processing; visual computing, computer vision, content-based image/video retrieval and understanding, machine learning, big data analytics, visual surveillance; archive restoration, and motion estimation. He sits on the editorial board of five international journals, including J. The Franklin Institute, IET Image Processing, Multidimensional Signal Processing and Systems, Int. J. Pattern Recognition and Artificial Intelligence, and Big Data Analytics.



Mohammad Asif Khan (Perdana University), PhD, is Assoc. Prof. & Dean, School of Data Sciences, & Director, Centre for Bioinformatics. His research interests are in biological data warehousing & applications of bioinformatics to the study of immune responses, vaccines, inhibitory drugs, venom toxins, & disease biomarkers. He has published in these areas, been involved in the development of several novel bioinformatics methodologies, tools, & specialized databases, and currently has 3 patents. He led the curriculum development of a Postgraduate Diploma in Bioinformatics & an MSc (Bioinformatics) program at Perdana University. He is an elected ExCo member of the Asia-Pacific Bioinformatics Network (APBioNET) since 2010, Honorary Director of APBioNet Limited since 2012, & currently President of Association for Medical and Bio-Informatics, Singapore (AMBIS). He has donned various important roles in the organization of many local & international bioinformatics conferences, meetings & workshops.



Chan Chee Seng (University Malaya) received his Ph.D. degree from the University of Portsmouth, U.K., in 2008. He is currently an Associate Professor with the Faculty of Computer Science and Information Technology, University of Malaya, Malaysia. His research interests include computer vision and fuzzy set theory, particularly on image/video content analysis. He received several notable awards, such as the Young Scientist Network-Academy of Sciences Malaysia in 2015 and the Hitachi Research Fellowship in 2013. He is/was the Founding Chair of the IEEE Computational Intelligence Society Malaysia Chapter, the Organizing Chair of the Asian Conference on Pattern Recognition (ACPR2015), and the General Chair of the IEEE International Workshop on Multimedia Signal Processing (MMSP2019) and IEEE Visual Communications and Image Processing (VCIP2013).



Chau De Ming (Universiti Putra Malaysia) is working as a Senior Lecturer in the Department of Biomedical Sciences at the Faculty of Medicine and Health Sciences. His research is on understanding the role of stem cells in cancer development. De Ming also leads the Young Scientists Network-Academy of Sciences Malaysia (YSN-ASM) Responsible Conduct of Research (RCR) Programme. The objective of this programme is to promote research integrity in Malaysia by conducting workshops, seminars and providing reference materials on RCR.



ORGANIZERS



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