BIR
The British Institute of Radiology

21 & 22
NOVEMBER
2020

APPROVED BY THE BIR

INDIAN RADIOLOGY AND IMAGING ASSOCIATION (IRIA) - ARTIFICIAL INTELLIGENCE

Virtual event

CPD: 4 CPD CREDITS (PER DAY)

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INDIAN RADIOLOGY AND IMAGING ASSOCIATION (IRIA) - ARTIFICIAL INTELLIGENCE

CPD: UP TO 8 CREDITS

The Indian Radiology and Imaging Association's (IRIA) is hosting a meeting delivered by the BIR focused on Artificial Intelligence over the weekend of Saturday 21-Sunday 22 November.

The event is free to all IRIA members with a special discounted rate for BIR members.

Programme organisers

Dr Sridhar Redla, President of British Institute of Radiology and Consultant Radiologist, The Princess Alexandra Hospital NHS Trust

Dr Deepak Patkar, President of Indian Radiological & Imaging Association; Director - Medical Services & Head - Imaging, Nanavati Super Speciality Hospital, Mumbai

Dr Vidur Mahajan, Associate Director, Mahajan Imaging and Head (R&D), Caring

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This course provides up to 8 CPD credits in accordance with the CPD Scheme of the Royal College of Radiologists

Day 1: Saturday 21 November
15:00-18:45 IST/ 09:30-13:15 GMT
4 CPD Credits

	Chair: Dr Deepak Patkar
15:00	**Welcome and introduction -** Dr Deepak Patkar, President of Indian Radiological & Imaging Association; Dr Sridhar Redla, President of British Institute of Radiology
15:05	**Artificial Intelligence in Radio-diagnostic care : The global scenario** Dr Sridhar Redla, President of British Institute of Radiology and Consultant Radiologist, The Princess Alexandra Hospital NHS Trust
15:20	**The gift from yesterday: Medical data as a public good** Dr Matt Lungren, Co-Director Stanford Artificial Intelligence in Medicine and Imaging Center, Associate Professor Radiology
15:45	**Texture based radiomics analysis in oncology** Dr Balaji Ganeshan, Senior Imaging Scientist, University College London
16:15	**Q&A**
16:20	**AI in Critical Care and Emergency Radiology** Dr Anjali Agrawal, Consultant Radiologist, Teleradiology Solutions
16:40	**Q&A**
16:45	**Break**
	Chair: Dr Harsh Mahajan
17:10	**AI in MRI and PET Image Acquisition and Reconstruction** Dr Greg Zaharchuk, Professor of Radiology and practicing Neuroradiologist, Stanford University; Co-founder of Subtle Medical
17:30	**Role of Radiologists in Building AI** Dr Kristina Elizabeth Hawk, Clinical Instructor, Stanford University School of Medicine President at RadPartners, Instructor at Stanford University
17:50	**Assuring safe, effective & ethical AI in Radiology (Keynote)** Dr Charles Kahn, Professor and Vice Chair of Radiology, University of Pennsylvania
18:30	**Q&A**
18:45	**Close of session**

Day 2: Sunday 22 November
15:10-18:30 IST/ 09:40-13:00 GMT
4 CPD Credits

	Chair: Professor Sanjay Gandhi
15:10	**Welcome and introduction -** Dr Deepak Patkar, President of Indian Radiological & Imaging Association; Dr Sridhar Redla, President of British Institute of Radiology
15:15	**Testing and Validation of AI** Dr Vasanth Venugopal, Imaging Lead & Consultant Radiologist, Caring, Mahajan Imaging
15:50	**Deploying AI in the Clinical Workflow** Dr Vidur Mahajan, Head of Research & Development, Centre for Advanced Research in Imaging, Neurosciences & Genomics (CARING)
16:15	**Getting started with building AI - A Radiologist's Perspective** Dr Judy Gichoya, Assistant Professor, Department of Radiology and Imaging Sciences, Emory University School of Medicine
16:35	**Break**
	Chair: Dr Vidur Mahajan
16:55	**Impact of AI on radiology training** Dr Vijay Jayaram, Consultant Radiologist, The Princess Alexandra Hospital NHS Trust
17:05	**Role of AI in reducing errors in radiology** Professor Sanjay Gandhi, Core Clinical Research and Innovation Lead, North Bristol NHS Trust; and Head of Radiology and Diagnostic Imaging, University of Bristol
17:25	**Keynote lecture - Data is the new Oil** Dr Keith Dreyer, Chief Data Science Officer and Corporate Director for Enterprise Medical Imaging for Partners Healthcare; Associate Professor of Radiology, Harvard Medical School
17:55	**Panel Discussion - Future of Radiology** Dr Keith Dreyer, Dr Sridhar Redla, Dr Deepak Patkar, Dr Harsh Mahajan Moderated by Dr Vidur Mahajan
18:30	**Close of session**

Biographies

Dr Sridhar Redla, President of the British Institute of Radiology, **Consultant Radiologist, The Princess Alexandra Hospital NHS Trust, Harlow, UK**

Dr Sri Redla is currently BIR Honorary Secretary and is a Consultant Radiologist and the Clinical Lead for the AI Assurance Board, helping the Trust with the Digital strategy at Princess Alexandra Hospital, Harlow. Dr Redla was Chair of the Clinical Imaging Special Interest Group (SIG) at the BIR and has taken an active lead in supporting special interest group and branches. He has also played a vital role in helping to develop and grow the BIR Annual Congress. Dr Redla was the College Tutor for Radiology at Princess Alexandra Hospital, Harlow and a member of the East of England Deanery Radiology Training Committee between 2004 and 2007. He has taken on various management roles in his Trust from 2007.

Dr Deepak Patkar

Dr Deepak Patkar is the curent President of Indian Radiological & Imaging Association and Director - Medical Services & Head - Imaging, Nanavati Super Speciality Hospital, Mumbai. Dr Deepak Patkar is a globally reputed Radiologist with impeccable credentials -has over the course of a career spanning nearly 28 years in the UK and in India.

Dr. Vijay Jayaram, Consultant Radiologist, The Princess Alexandra Hospital NHS Trust, Harlow, UK

Dr. Vijay Jayaram qualified as a radiologist from Mumbai, India prior to coming to the UK. He then obtained a PhD in Medical Ultrasound from Imperial College, London and an MSc in Digital Imaging from the University of Westminster before completing his radiology training programme and obtaining the FRCR. He has been a Consultant Radiologist at the Princess Alexandra Hospital since 2006.

Dr. Jayaram is a member of the Society of Imaging Informatics in Medicine (SIIM), affiliate member of The British Computer Society (BCS) and member of the Institution of Engineering Technology (MIET). He is currently Chair of the Clinical Intelligence and Informatics Special Interest Group of the BIR, is a Certified Imaging Informatics Professional (CIIP) by the American Board of Imaging Informatics and a Fellow of the Faculty of Clinical Informatics (FFCI) in the UK.

Biographies

Dr Balaji Ganeshan

Dr Balaji Ganeshan PhD, Medical Imaging Scientist, Inventor & Entrepreneur. Balaji has a PhD in Biomedical Engineering from the University of Sussex and is co-inventor of pioneering Radiomics applications based on texture analysis with AI & Machine-learning.

He has co-founded two UK based innovative medical imaging technology companies - TexRAD Ltd and StoneChecker Software Ltd in the area of precision medicine in cancer and kidney stone patient evaluation from radiological scans. Both the companies were acquired into two LSE listed companies. Balaji is experienced in market - awareness, identifying the clinical-use cases and a specialist in product-market fit for high-tech imaging solutions.

Dr Ganeshan is a Senior Medical Imaging Scientist at University College London. His work has resulted in international patents and published through 100+ contributions in high - impact journals, international conference presentations and keynote lectures. He has secured funding from CRUK, Prostate Cancer UK in addition to commercial seed funding. Dr. Ganeshan has global experience working with stakeholders across the commercialisation value chain including R&D teams, the C-suite, sales & purchasing. Balaji has established a global distribution agreement with major OEM and has achieved commercial deployment for TexRAD in 70+ prolific University/Government and Private hospitals and imaging centres in USA, UK, EU, Australia, India, China, South-Korea, Singapore, Japan, HK.

Dr Anjali Agrawal

Dr Anjali Agrawal is a consultant radiologist to Teleradiology Solutions, where she heads the Delhi Operations of the group. She graduated in medicine from the All India Institute of Medical Sciences in 1994, followed by Radiology training at AIIMS and the Baylor College of Medicine, Houston, Texas (2002). Dr Agrawal joined as an Assistant Professor of Radiology at the VA Medical Center and Baylor College of Medicine (2003).

Her academic activities include participation in both national and international radiology meetings, where she is an invited speaker and has presented scientific data on workflow and quality assurance in emergency teleradiology and artificial intelligence and also educational exhibits on various subjects in clinical emergency radiology. She has also published on these topics including co-authoring a book chapter on teleradiology. She is one of the founder members of the Society for Emergency Radiology in India. She is an editorial board member of the Journal Emergency Radiology. She has also been a co-director of the AIRP-PGI categorical courses in Radiology in India. She was conferred the Fellowship of the American Society of Emergency Radiology in 2020.

Biographies

Dr Matt Lungren

Dr Matt Lungren is the Co-Director of the Stanford Center for Artificial Intelligence in Medicine and Imaging and Medical School Faculty in the Department of Radiology at Stanford University Medical Center. Dr. Lungren's NIH and NSF funded research is in the field of AI and deep learning in medical imaging, precision medicine, and predictive health outcomes. His work has been featured in national news outlets such as NPR, Vice News, Scientific American and he regularly speaks at national and international scientific meetings on the topic of AI in healthcare.

Pofessor Sanjay Gandhi, Professor of Radiology, Consultant Radiologist, North Bristol NHS Trust, Head of Radiology Training, University of Bristol

Professor Sanjay Gandhi is Head of Radiology Training at the University of Bristol. He is the Core Clinical Service Research & Innovation Lead at North Bristol NHS Trust, which is the largest teaching hospitals in South West England. In his 30-year career spanning over the UK, Indian and the USA healthcare sectors, Dr Gandhi has won several outstanding achievement awards for his contributions to the Healthcare Innovations and Higher Education. Times TV Network honoured him as a 'Global Academic Icon' and the British Medical Association (BMA) as a 'Highly Commended Editor'.

Dr Gandhi established a new lecture programme with the University of West of England in 2008 to teach Telemedicine, Teleradiology and other latest innovations. As an Honorary Professor, he teaches students and mentors faculty at two Commonwealth Universities. He has held several other senior positions including the position of Lead Radiologist for South West NHS England & NHS Improvement. Prof. Gandhi is regional Chairman of the British Institute of Radiology.

For the past 18 years, Prof. Gandhi has been at the forefront of the development of Computer-Aided Diagnosis (CAD) & Artificial/Augmented Intelligence. He has regularly published accomplished articles and research papers in reputable international indexed Journals such as the British Journal of Radiology (BJR), Clinical Radiology and the British Journal of Hospital Medicine (BJHM). He sits on the Editorial Boards of four peer-reviewed medical Journals and has published several Editorials on the use of high-tech medicine to improve patient care. Dr Gandhi has been an advisor to several medium to large multinational organisations. He is a frequently invited Keynote speaker and moderator at prestigious international conferences. Prof. Gandhi has contributed to the development of National Imaging Guidelines for the Royal College of Radiologists'. He has Co-authored and Edited 8 award-winning medical textbooks and developed several eLearning tools and teaching Apps.

Biographies

Dr Keith Dreyer, Chief Data Science Officer and Chief Imaging Information Officer, Mass General Brigham

Dr Keith J. Dreyer, DO, PhD, FACR, FSIIM, is Chief Data Science Officer and Chief Imaging Information Officer for Mass General Brigham. He also holds the positions of Vice Chairman of Radiology, Informatics, at Massachusetts General Hospital, Chief Executive for the MGH & BWH Center for Clinical Data Science, and Associate Professor of Radiology at Harvard Medical School. He is ABR board certified in diagnostic radiology with a BS in Mathematics, MS in Image Processing, PhD in Computer Science and medical fellowships in Imaging Informatics and Magnetic Resonance Imaging from Harvard University at MGH. Dr. Dreyer is the Chief Science Officer for the American College of Radiology's Data Science Institute and has held numerous board, chair, advisory, and committee positions with the American College of Radiology, Radiological Society of North America, Society of Imaging Informatics in Medicine and numerous global healthcare corporations. He has authored hundreds of scientific papers, presentations, chapters, articles and books; lecturing worldwide on artificial intelligence, clinical data science, cognitive computing, clinical decision support, clinical language understudying, digital imaging standards, and implications of technology on the quality of healthcare and payment reform initiatives.

Dr Judy Gichoya, Assistant Professor, Department of Radiology and Imaging Sciences, Emory University School of Medicine

Dr. Gichoya is a multidisciplinary researcher, trained as both an informatician and a clinically active radiologist. She is an assistant professor at Emory university, and works in Interventional Radiology and Informatics. She has been funded through the Grand Challenges Canada, NBIB and NSF ECCS. Her career focus is on validating machine learning models for health in real clinical settings, exploring explainability, fairness, and a specific focus on how algorithms fail. She has worked on the curation of datasets for the SIIM (Society for Imaging Informatics in Medicine) hackathon and ML committee. She volunteers on the ACR and RSNA machine learning committees to support the AI ecosystem to advance development and use of AI in medicine. She is currently working on the sociotechnical context for AI explainability for radiology, especially the dimensions of human factors that govern user perceptions and preferences of XAI systems.

Dr Charles E. Kahn, Jr., Professor and Vice Chair of Radiology, University of Pennsylvania

Dr. Charles Kahn is Professor and Vice Chairman of Radiology at the University of Pennsylvania. He is a Board-certified, practicing radiologist with expertise in body CT and ultrasound, and holds degrees in Mathematics (BA) and Computer Sciences (MS). Professional interests include health services research, decision support, artificial intelligence, information standards, and knowledge representation. Honors include the American Roentgen Ray Society Gold Medal, Italian Society of Medical Radiology Honorary Membership, and elected Fellowship of the American College of Radiology, the American College of Medical Informatics, and the Society for Imaging Informatics in Radiology. He is author of more than 120 scientific publications, and has given more than 100 invited lectures. He is Editor of Radiology: Artificial Intelligence.

Biographies

Dr K. Elizabeth Hawk, President, Matrix Pod East / Clinical Instructor, Radiology Partners Matrix / Stanford University Nuclear Medicine

Dr. Hawk is a Nuclear Medicine Physician and Neuroradiologist. Her integrated MD/PhD training built a foundation to explore translational discoveries, understand the research process, and teach new emerging concepts.

Following an undergraduate degree in Molecular Cell Biology at UC Berkley, Dr. Hawk completed a masters in medical radiation physics and a PhD in Neuroscience at The Chicago Medical School (RFUMS). She then completed her medical doctorate, residency and dual fellowship requirements at the University of Southern California (USC), and is now dual board certified in Nuclear and Molecular Medicine as well as Radiology. Currently, Dr. Hawk is faculty for Stanford Hospital, Nuclear Medicine Division, and also holds a leadership position in Radiology Partners, the largest physician owned radiology private practice in the US.

She holds several national leadership positions in organized medicine, and is internationally recognized as a thought leader in artificial intelligence applications in medicine. She is a proud member of the RadXX board, promoting diversity in medical informatics, and is faculty for the ACR Radiology Leadership Institute.

Dr Greg Zaharchuk, Professor of Radiology, Stanford University

Dr. Greg Zaharchuk is Professor of Radiology at Stanford University in the Division of Neuroimaging. He received his MD from Harvard Medical School, his PhD from the Harvard-MIT Health Sciences and Technology (HST) program, and clinical radiology and neuroradiology training at UCSF. He is a clinical neuroradiologist and directs the Center for Advanced Functional Neuroimaging (CAFN) at Stanford University where his research focuses on advanced medical imaging techniques and algorithms (including AI) with the goal of alleviating the burden of neurological disease. He is a member of the editorial board of Radiology, Journal of Magnetic Resonance Imaging, and the American Journal of Neuroradiology. He is the president-elect of the American Society of Functional Neuroradiology (ASFNR) and chaired both 2018 Machine Learning Workshops sponsored by the International Society of Magnetic Resonance in Medicine (ISMRM). He was recently elected as a Fellow of the American Institute for Medical and Biological Engineering (AIMBE). In 2018, together with Dr. Enhao Gong, he co-founded Subtle Medical, a company devoted to improving image quality and safety using AI.

Biographies

Dr Harsh Mahajan, Founder & Chief Radiologist, Mahajan Imaging

Dr. Harsh Mahajan is the Founder and Chief Radiologist at Mahajan Imaging, a chain of high-end medical imaging centres in New Delhi. He is the Honorary Radiologist to the President of India and a recipient of the Padma Shri award from the Government of India. He has been President of the Indian Radiology & Imaging Association and Indian Society of Neuroradiology. He is also a Consultant to the International Atomic Energy Agency (IAEA) and is a post-graduate teacher and examiner in radiology and nuclear medicine. He also serves as Chairman of CARING - The Centre for Advanced Research in Imaging, Neuroscience and Genomics - which is Mahajan Imaging's research division. He is also the Senior Vice President of the Healthcare Federation of India. He did his MBBS from Maulana Azad Medical College, Delhi, MD in Radiology from PGI, Chandigarh and Fellowship in MRI from the MD Anderson Cancer Institute, Houston.

Dr Vasanth Venugopal, Imaging Lead, Caring, Mahajan Imaging

Dr Vasanth leads the medical Imaging research at the centre for Advanced research in Imaging neurosciences & genomics in New Delhi. He is also the core member of the CARPL development team. After his residence in Radiology, he has served as a teaching faculty member at the Maulana Azad Medical College in New Delhi. He is a Senior consultant Radiologist with the prestigious Mahajan Imaging Centre in New Delhi. His special interests include Advanced imaging techniques, Artificial intelligence, and 3D printing. His contributions in the field of AI include describing the algorithmic audit framework and proposal of new validation metric. .

Dr Vidur Mahajan, Head of Research & Development, Centre for Advanced Research in Imaging, Neurosciences & Genomics (CARING)

Dr. Vidur Mahajan runs CARING – the Centre for Advanced Research on Imaging, Neuroscience and Genomics – which works with more than 30 research groups across the world and aims to bring cutting-edge products in the artificial intelligence space into clinical practice through its platform called CARPL. CARPL is world's only platform for the development, testing and deployment of medical imaging AI in clinical practice. CARING has published several papers on AI, including the first paper on AI in the Lancet, and has more than 100 academic and conference papers in the field across the world. He is also additionally responsible for running Mahajan Imaging, one of India's leading medical imaging providers, and CARINGdx, an advanced molecular diagnostics lab. He has done an MBA with dual majors in finance and healthcare management from the Wharton School of Business and did MBBS from Lokmanya Tilak Municipal Medical College, Mumbai.

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