

## ICMR-NATIONAL INSTITUTE FOR RESEARCH IN DIGITAL HEALTH AND DATA SCIENCE

is organising

**"UNLOCKING AI FOR HEALTHCARE: A BEGINNER'S GUIDE TO MEDICAL IMAGING FOR EARLY DIAGNOSIS"**

Supported by ICMR funded project :- **"Artificial Intelligence based-tool for detection of Breast & Oral Cancer"**

**13th and 14th February 2025**

Machine Learning 101: A Beginner's Guide to Smarter Healthcare

How Do Machines Read Images: An Introduction to Computer Vision

Role of Preprocessing and Feature Engineering in Medical Imaging AI

Appropriate Dataset Size and Performance Metrics for Image-Based Algorithm Development

AI/ML Solutions in Low-Resource Settings

### VENUE

National Institute of Health and Family Welfare The National Institute of Health and Family Welfare (NIHF), Munirka, New Delhi-110067



#### Chief Guest

Dr. Rajeev Bahl,  
Secretary to Government of India,  
Department of Health Research &  
Director General, Indian Council of Medical Research



#### Key Note Address

Dr. Nikhil Tandon,  
Professor and Head, Department of Endocrinology,  
AIIMS Delhi



#### Chief Patron

Dr. Sanghamitra Pati,  
Scientist-H, Additional Director General &  
Director-in-Charge of ICMR-NIRDHDS, ICMR-  
NICHDR and ICMR-RMRC, Bhubaneswar

### Confirmed Speakers of the Workshop



Dr. Amit Sethi, MS, Ph.D.  
Professor, Department of  
Electrical Engineering, C-MINDS,  
Kolkata  
Center for Digital Health, IIT  
Bombay



Dr. Krithika Rangarajan, MD,  
Ph.D.,  
Associate Professor,  
Department of Radiation  
Oncology,  
Dr. B.R.A.R.C.H, AIIMS Delhi



Dr. Chetan Arora,  
MS, Ph.D., Professor,  
Department of Computer  
Science and Engineering, IIT  
Delhi



Dr. Kahlil Jaday, MD, Ph.D.,  
Assistant Professor, Koita  
Center for Digital Health, IIT  
Bombay



Dr. Somesh Gupta,  
MBBS, MD, Professor,  
Department of Dermatology  
and Venereology, AIIMS  
Delhi



Dr. Ankit Sakhuja,  
MS, Ph.D, Associate Professor,  
Division of Data Driven and  
Digital Medicine, Institute for  
Critical Care Medicine, ICAHN  
School of Medicine, Mount  
Sinai, New York



Dr. Chandramatika Basak,  
MS, Ph.D, Associate Professor,  
Centre for Vital Longevity and  
Behavioural and Brain Sciences,  
University of Texas at Dallas, US



Dr. Pradeep Venkatesh,  
MBBS, MD, Professor,  
Department of Ophthalmology  
Diseases of the Retina,  
Vitreal and Uvea, AIIMS  
Delhi



Dr. Swapnil Rane,  
MD, DNB, PDCC, MRCS, FRC  
Path, Associate Professor,  
Department of Pathology,  
ACTREC, Tata Memorial  
Centre, Mumbai



Mr. Anuj Patel,  
M.Tech, PhD Scholar  
IIT Bombay



Mr. Ravikant Gupta,  
M.Tech, PhD Scholar,  
IIT Bombay



Scan for Website

#### Limited Slots

Last Date for Registration:

31/01/2025



Scan for Registration

#### Organizing Chairperson:

Dr. Garima Jain, Scientist-D

#### Organising Secretary:

Dr. Vishal Deo, Scientist-C

#### Organising Members:

Dr. Sneha Shalini, Dr. Jeetender Yadav, Mr. Om Prakash, Mrs. Nanda Nimje, Mr. Hemant Kumar, Mr. Jiwan Bisht, Mr. Jasmer, Mr. Gaurav, Mrs. Archana, Mr. Jagat, Mr. Shiv Kumar, Mr. Naresh Kumar, Mr. Siddhant, Mr. Jitender Kumar, Mr. Jatin Kashyap, Mr. Divyajeet Rout, Mrs. Nishi Halduniya, Mr. Sharath Kumar

Time	Session	Speaker
Breakfast (7:30AM - 8:45AM)		
Theme Day 1: Foundations of AI for Healthcare: Learn, Apply, & Annotate.		
8:45AM - 9:15AM	Registration of Participants	
9:15AM - 9:30AM	Short Introduction of Participants	
9:30AM - 10:15AM	Why Do We Even Care About AI?	<u><b>Dr. Kshitij Jadav</b></u> MD, Ph.D., Assistant Professor, Koita Center for Digital Health, IIT, Bombay
10:15AM - 11:00AM	Introduction to Machine Learning: Concepts and Jargons for Beginner's	<u><b>Dr. Chetan Arora</b></u> MS, Ph.D., Professor, Department of Computer Science and Engineering, IIT Delhi
Tea Break (11:00AM - 11:15AM)		
11:15AM - 12:00PM	How Do Machines Read Images: An Introduction to Computer Vision	<u><b>Dr. Amit Sethi</b></u> MS, Ph.D., Professor, Department of Electrical Engineering, C-MINDS, Koita Center for Digital Health, IIT Bombay
12:00PM - 12:45PM	From Pixels to Insights: The Role of Preprocessing and Feature Engineering in Medical Imaging & AI	<u><b>Dr. Amit Sethi</b></u> MS, Ph.D., Professor, Department of Electrical Engineering, C-MINDS, Koita Center for Digital Health, IIT Bombay
Lunch Break (12:45PM - 2:00PM)		

Time	Session		Speaker
2:00PM - 2:30PM	Inauguration Ceremony & Welcome address		<b><u>Chief Guest: Dr. Rajiv Bahl</u></b> , Director General, ICMR & <b><u>Chief Parton: Dr. Sanghamitra Pati</u></b> , Scientist-H, Additional Director General-ICMR & Director-In-Charge, ICMR- NIRDHDS, ICMR- NICHDR and ICMR-RMRC, Bhubaneswar
2:30PM - 3:00PM	Enabling Research Excellence: The Role of AI in Advancing India's Healthcare Goals		<b><u>Chief Guest: Dr. Rajiv Bahl</u></b> , Director General, ICMR
3:00PM - 3:30PM	The Role of Imaging in Early Diagnosis of Endocrine Disorders / AI Driven Insights from Diabetic Retinopathy Imaging: Implications for Public Health / Imaging Biomarkers for Metabolic Diseases: Current Trends and Future Opportunities / Digital Health Interventions for Hypertension and Diabetes: Lessons from the ITREC Model Advancing Chronic Disease Care Through Medical Imaging and AI: Insights from Endocrinology		<b><u>Key Note Address: Dr. Nikhil Tandon</u></b> , Professor and Head, Department of Endocrinology & Metabolism, AIIMS New Delhi
3:30PM - 4:15PM	Parameters for Evaluation of AI Algorithms "Appropriate Dataset Size and Performance Metrics for Image-Based Algorithm Development"		<b><u>Dr. Amit Sethi</u></b> , MS, Ph.D., Professor, Department of Electrical Engineering, C-MINDS, Koita Center for Digital Health, IIT Bombay
Tea Break (4:15PM - 4:30PM)			
4:30PM - 5:15PM	Interactive Workshop "Annotation Software for Medical Image Labeling" (Batch 1)	Interactive Workshop "Code to Care: Unveiling Medical Image Analysis with Python and Orange" (Batch 2)	<b><u>Mr. Abhijeet Patil</u></b> (M. Tech, Ph.D. Scholar) & <b><u>Mr. Ravi Kant Gupta</u></b> (M.Tech, Ph.D. Scholar)
5:15PM - 6:00PM	Interactive Workshop "Code to Care: Unveiling Medical Image Analysis with Python and Orange" (Batch 2)	Interactive Workshop "Annotation Software for Medical Image Labeling" (Batch 1)	<b><u>Mr. Abhijeet Patil</u></b> (M. Tech, Ph.D. Scholar) & <b><u>Mr. Ravi Kant Gupta</u></b> (M.Tech, Ph.D. Scholar)

Time	Session	Speaker
<b>Theme Day 2: AI in Action: Clinical Imaging Innovations for Public Health Applications</b>		
8:30AM - 9:00AM	AI in Cardiology and Critical Care Imaging	<b><u>Dr. Ankit Sakhuja,</u></b> MS, Ph.D, Associate Professor, Division of Data Driven and Digital Medicine, Institute for Critical Care Medicine, ICAHN School of Medicine, Mount Sinai, New York
9:00AM - 9:30AM	Identifying Neuroprotective Predictors of Alzheimer's Disease using fMRI -based Brain Networks	<b><u>Dr. Chandramallika Basak,</u></b> MS, PhD, Associate Professor, Centre for Vital Longevity and Behavioural and Brain Sciences, University of Texas at Dallas, US
<b>High Tea (9:30AM - 10:00AM)</b>		
10:00AM - 10:45AM	Radiology, AI and Primary Health Care	<b><u>Dr. Krithika Rangarajan,</u></b> MD, Ph.D., Associate Professor, Department of Radiation Oncology, Dr. B.R.A.I.R.C.H, AIIMS, Delhi
10:45AM - 11:30AM	Democratizing AI utility in retinal diagnosis- looking beyond current approaches	<b><u>Dr. Pradeep Venkatesh,</u></b> MBBS, MD, Professor, Department of Ophthalmology Diseases of the Retina, Vitreous and Uvea, AIIMS Delhi
11:30AM - 12:15PM	Digital and Computational Pathology: A pathologist's perspective	<b><u>Dr. Swapnil Rane,</u></b> MD, DNB, PDCC, MRes, FRC Path, Associate Professor, Department of Pathology, ACTREC, Tata Memorial Centre, Mumbai
12:15PM - 1:00PM	AI in Dermatology and Beyond	<b><u>Dr. Somesh Gupta</u></b> MBBS, MD, Professor, Department of Dermatology and Venereology, AIIMS Delhi
<b>Lunch Break (1:00 PM - 2:00 PM)</b>		
2:00PM - 2:45PM	Deployment Challenges - Why is AI in Health Challenging?	<b><u>Dr. Krithika Rangarajan,</u></b> MD, Ph.D., Associate Professor, Department of Radiation Oncology, Dr. B.R.A.I.R.C.H, AIIMS, Delhi
2:45PM - 3:30PM	AI/ML Solutions in Low-Resource Settings	<b><u>Dr. Kshitij Jadav,</u></b> MD, Ph.D., Assistant Professor, Koita Center for Digital Health, IIT, Bombay
3:30PM - 4:00PM	Future Directions in AI for Healthcare	<b><u>Chief Patron: Dr. Sanghamitra Pati,</u></b> Scientist-H, Additional Director General-ICMR & Director-In-Charge, ICMR- NIRDHDS, ICMR- NICHDR and ICMR-RMRC, Bhubaneswar
<b>Tea Break (04:00 PM - 04:30 PM)</b>		
<b>Closing Remarks and Certificate Distribution (4:30 PM - 5:00 PM)</b>		