

High-end Training Workshop on “Artificial Intelligence in Oral Health Science: from basics to clinical applications”

March 18 to 22, 2024

Dear Colleagues and friends,

Centre for Dental Education and Research, All India Institute of Medical Sciences, New Delhi, is holding the workshop “Artificial Intelligence in Oral Health Science: From Basics to Clinical Applications” from March 18-22, 2024 for Dental postgraduate students in India for training in artificial intelligence (AI) fundamentals and contemporary clinical applications in the field of oral health science. This workshop is supported by the Science and Engineering Research Board (SERB), Department of Science and Technology (DST), Govt. of India through the Accelerate Vigyan Scheme.

The workshop is specifically intended for Dental postgraduate students willing to become actively involved in AI-based dental research and clinical applications. Students will be taught reading and interpretation of AI-based dental research papers along with various guidelines for AI-based dental research conduction and reporting. The postgraduates will also have an opportunity to share and discuss the ideas of collaborative innovations in this workshop.

The workshop will be a mixture of presentations, interactions, and hands-on-sessions. I request you to encourage and nominate your postgraduate students and resident doctors.

Looking forward to the active participation of your postgraduates and resident doctors (JRs and SRs).



Centre for Dental Education & Research (CDER),
AIIMS, New Delhi

NRRIDS,
AIIMS, New Delhi



CDER CDE Series 50

Know the Organizers

Chairperson



Dr. Ritu Duggal
Chief-CDER, Professor & Head Orthodontics Div.,
CDER, AIIMS, New Delhi

Workshop Convener



Dr. Prabhat Kumar Chaudhari
Additional Professor, Orthodontics Div.,
CDER, AIIMS, New Delhi

Organizing Committee

Prof. Ritu Duggal
Dr. Prabhat Kumar Chaudhari
Dr. Vilas Samrit
Dr. Rajiv .B



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Science and Engineering Research Board (SERB)
Department of Science and Technology (DST)
Govt. of India

Workshop Learning Objectives:

- To provide an understanding of the fundamentals of AI and various applications of AI in Dentistry
- To learn how to design and prepare a convolutional neural network (CNN) based algorithm for dental applications
- How to read, write, and report guidelines for AI-based dental articles
- Ethical considerations and challenges in adoption in oral healthcare
- Opportunity to discuss and share ideas for collaboration

Workshop Venue:

**Board Room, Ground Floor,
Centre for Dental Education and Research
All India Institute of Medical Sciences, New Delhi-110029**

How to apply?

- Registration opens: 25th February, 2024
- Last date of registration: 3rd March, 2024
- Confirmation of participation: 6th March 2024 (will be informed through e-mail)
- Workshop Registration Fee: Nil
- Limited attendance to 30 participants
- Working lunch will be provided
- Interested eligible candidates may apply with NOC from the Head of Dept./ Organization and a one-page motivation letter
- Only candidates with full attendance will get certificates

Registration Link: <https://forms.gle/Jah6XWkwD1CC2t699>

Contact details:

E-mail: dr.prabhatkc@gmail.com



Course Faculty



Dr. Shubhankar Mishra
Reader in School of Computer Sciences, National Institute of Science Education and Research, Bhubaneswar



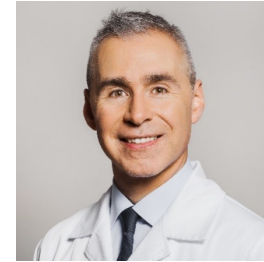
Prof. Shandar Ahmad
Professor, School of Computational and Integrative Sciences, Jawaharlal Nehru University, New Delhi



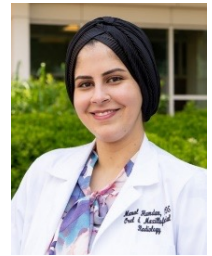
Dr. Amit Laddi
Principal Scientist (Biomedical Applications Group), Central Scientific Instruments Organization (CSIR-CSIO), Chandigarh & Professor, Academy of Scientific and Innovative Research (AcSIR)



Prof. Nikhilesh Vaid
President
World Federation of Orthodontists (WFO), USA.



Dr. Sergio Uribe
Assoc Prof / Lead Researcher,
Dept Conservative Dent and Oral Health & BBCE
Riga Stradins University, Riga, Latvia



Dr. Manal Hamdan
Assistant Professor and
Predoctoral Director of Oral and Maxillofacial Radiology
Diagnostic Sciences Division
Marquette University School of Dentistry, USA



Prof. Tulika Tripathi
Director Professor (Orthodontics) and
Director of Maulana Azad Institute of Dental Sciences, New Delhi, India



Dr. Vishnu Vardhana Rao,
M.Sc(Stat), Ph.D. (Stat),
M.Tech(IT), FAMS, FSMS,
FTASDirector (retd.)ICMR-
NIMSFormer HOD, AI Cell,
ICMRFormer Administrator
CTRIAnsari Nagar New Delhi



Dr. Jitendra Singh
Scientist-E, ICMR-
National Institute of
Medical Statistics (NIMS),
New Delhi



Dr. Shalini Gupta
Additional Professor
(OMR), CDER, AIIMS,
New Delhi



Dr. Puneet Batra
Principal, Professor, and Head
Department of Orthodontics and
Dentofacial Orthopedics Manav
Rachna Dental College,
Faridabad



Dr. Rata Rokhshad
PI of ethics at Topic Group
Dental Diagnostics and Digital
Dentistry, ITU/WHO Focus
Group AI on Health



Ms Kirsty Watson
Business Developer
Lead, Evidence Prime,
Laser AI.



Dr. Vijay Kumar
Additional Professor
(Endodontics), CDER, AIIMS,
New Delhi



Dr. Bala Chakravarthy
Assistant Professor
National Institute of
Technology, Rourkela



Dr. Vinay Soni
Associate Professor,
(Orthodontics), OHSC,
PGIMER, Chandigarh



Dr. Manojkumar
Jaiswal Associate
Professor
(Pedodontics), OHSC,
PGIMER, Chandigarh.



Dr. Prabhat Kumar Chaudhari
Additional Professor
(Orthodontics), CDER, AIIMS,
New Delhi

Workshop Content and Schedule

18/03/2024 schedule

9:00 AM onwards	Registration and introduction and opening remarks
10:00 AM– 12:30 PM	Artificial Intelligence (AI) in Dentistry: What can we learn from Others (Dr. Tulika Tripathi) Introduction to Artificial intelligence and Machine learning (Dr. Bala Chakravarthy and Dr. Jitendra Singh)
12.30PM– 2:00 PM	Lunch BREAK
2:00 PM– 4:30 PM	Current Applications of AI in Dentistry (Dr. Puneet Batra) Fundamentals of Artificial Intelligence for dental professionals (Dr. Shubhankar Mishra)

19/03/2024 schedule

10:00-11.00 AM	Radiological imaging requirements for AI applications in Dentistry (Dr. Manal Hamdan) Virtual Mode
11.00 AM - 12:30 PM	Standardization of dental imaging procedures for AI applications (Dr. Shalini Gupta) Artificial Intelligence (AI) in Endodontics (Dr. Vijay Kumar)
12.30PM– 2:00 PM	Lunch BREAK
2:00 PM– 4:30 PM	Basics of convolutional neural network (CNN) (Prof. Shandar Ahamad) How to design and build AI algorithm for Medical/dental Imaging (Dr. Shubhankar Mishra)

20/03/2024 schedule

10:00 AM– 12:30 PM	Hands-on: Machine learning and Deep learning-based algorithm design for basic image analysis ▪ Segmentation in Medical Imaging (Dr. Shubhankar Mishra)
12.30PM– 2:00 PM	Lunch BREAK

20/03/2024 schedule

2:00 PM– 4:30 PM	<ul style="list-style-type: none"> Sample Case Study: Mask R-CNN for detection of Dental Carries Sample Case Study: Mask R-CNN for detection of Dental Implant (Dr. Shubhankar Mishra) <p>Diagnostic applications of AI using radiographs (ML & DL based detection of Sella Turcica morphology and dental caries) (Dr. Amit Laddi, Dr. Vinay Soni , Dr. Manojkumar Jaiswal)</p>
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21/03/2024 schedule

10:00-11.00 AM	Indian Council of Medical Research Ethical guidelines for the application of Artificial Intelligence in Biomedical Research and Healthcare 2023 (Dr. Vishnu Vardhana Rao)
11 AM-12 PM	Ethical considerations and challenges in adoption in oral healthcare (Dr. Rata Rokhshad) Virtual Mode
12PM-12.30PM	AI: What Should Clinicians Know? (Dr. Prabhat K Chaudhari)
12.00PM– 2:00 PM	Lunch BREAK
2:00 – 3:00 PM	How to read, write, and report guidelines for AI-based dental articles (Dr. Sergio Uribe) Virtual Mode
3:30 – 4:30 PM	Industry Session on LASER AI: The next generation tool for systematic reviews (Ms Kirsty Watson) Virtual Mode

22/03/2024 schedule

10:00 AM– 12:30 PM	Industry Session: will be announced Discussion of research idea by trainee for possible mentoring to develop a protocol for submission to funding agency Open house: Final Discussion, consensus, future and Valediction
12.30PM– 2:00 PM	Lunch BREAK