

**IEEE SPONSORED
FACULTY DEVELOPMENT PROGRAM
ON
AI IN HEALTHCARE
(24th – 28th July 2023)
Hybrid mode**

One-week Faculty Development Program (FDP) on " Artificial Intelligence in Healthcare ", under IEEE Affordable Healthcare Lab - SoC, IEEE MIT ADT University Student Branch in association with IEEE Engineering in Medicine and Biology Society Pune Chapter, IEEE Computational Intelligence Society Pune Chapter & IEEE Pune Section was organized by School of computing. The FDP was held between **24th to 28th of July 2023**.

Day 1, 24th July, 2023, Morning Session

The FDP was inaugurated by the esteemed guests Dr. Surekha Deshmukh, Chair IEEE Pune Section, Dr. Arun Jamkar, Founder Director and President, I4c, Dr. Veeky Baths BITS Goa and Dr. Rajneeshkaur Sachdeo, Director MITSOC, along with Dr. Ramchandra Pujeri, Dean MITSOC, Dr. Rekha Sugandhi, Dr. Ramesh Mali on 24th July 2023. The other guest present were Mr. Anand Deshmukh, Director Nuqare Pvt. Ltd, Mr. Girish Khilari, Past IEEE Pune Section Chair, Mr. Dheeraj Chaurasia, IEEE Pune Section YP Chair, Dr. Reena Pagare, Chair IEEE EMBS Pune chapter along with Faculty coordinators of FDP.



The IEEE Affordable Healthcare Lab was inaugurated by Dr. Surekha Deshmukh and Dr. Veeky Baths on 24th July 2023. The lab is sponsored by IEEE Pune Section, IEEE EMBS Pune Chapter. There are different projects which will be carried out under the lab in the healthcare domain.



The session on “**SSVEP and Eye-Blink detection based BCI as Assistive Technologies**” was delivered by **Prof. Veeky Baths** - Professor of Cognitive Neuroscience , BITS Pilani K K Birla Goa Campus . The speaker talked about SSVEP and Eye-Blink as SSVEP is a non-invasive BCI technique that uses visual stimuli to detect brainwave patterns, assisting individuals with motor disabilities to control external devices through visual attention. Eye-blink detection-based BCIs rely on capturing electrical signals from eye blinks, providing a simple and intuitive communication method for individuals with severe motor disabilities to operate computers and external devices.



The 2nd session on "**Opportunities for Innovations in the Field of Ayurveda and all ancient sciences**" was conducted by **Dr. Harish Patankar** , Director Kesha Ayurveda Skin and Hair Pvt. Ltd. The speaker discussed Opportunities for innovation in Ayurveda and ancient sciences that include integrating traditional knowledge with modern technology and personalized medicine approaches, leading to more effective and widely accepted holistic healthcare solutions.



Day 1, 24th July, 2023, Evening Session

Mr. Santosh Awasare, Ample Medicare delivered a session on “**Demo EEG machine**” from 3:00pm to 4:00pm. The Demo EEG machine is a device used to showcase and demonstrate the capabilities of an Electroencephalogram (EEG) system for recording and analyzing brainwave activity.



The session on “**AI in surgical skill training**” was conducted by **Dr. Arun Jamkar**, Founder Director and President, I4c , Chief Medical Officer, Indx Technology from 2:00pm to 3:00pm. The sessions provided information about How AI in surgical skill training revolutionizes medical education by offering realistic simulations and personalized feedback, enhancing the proficiency and safety of aspiring surgeons in a controlled virtual environment.

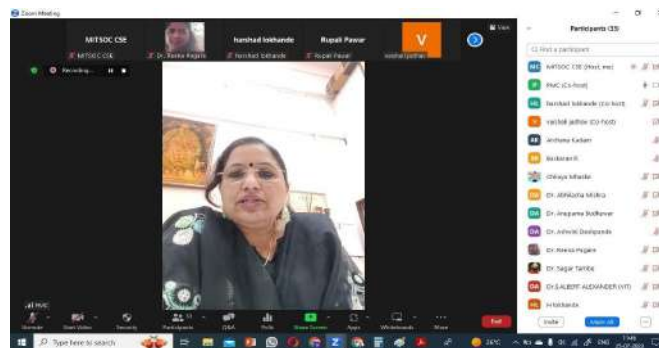


Day 2, 25th July, 2023, Morning Session

Dr. Reena Pagare, Chair IEEE EMBS Pune Chapter, Professor - MIT SoC - ADT University delivered the session on **“AI for Healthcare”**. The speaker discussed how AI is revolutionizing the entire healthcare sector from a global perspective as well as Indian perspective. She also urged the technologist to work in the healthcare domain since there is huge gap in the demand -supply.

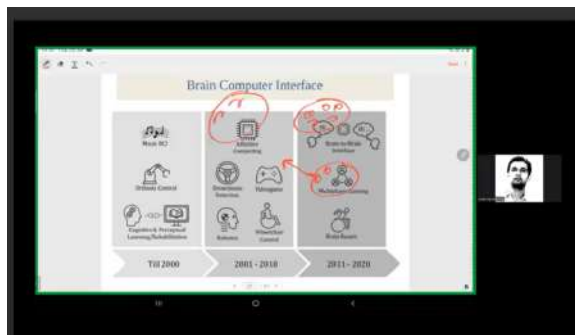


The session was conducted by **Dr. Vaishali Jadhav**, Assistant Medical Officer of Health, Pune Municipal Corporation on **“Healthcare Scenarios - Pune Perspective”**. She talked about Pune's healthcare landscape which is undergoing a significant transformation with the integration of AI technologies, including machine learning and data analytics. She also discussed the challenges any healthcare department is facing in bring technology to common people.



The session on **“AI/ML & Signal Processing for Brain Signals”** by Dr. Rishi Raj Sharma, DIAT Pune. He talked about AI/ML and signal processing play a crucial role in analyzing brain signals (EEG, fMRI, etc.),

enabling precise diagnosis of neurological disorders and personalized treatment approaches for improved brain health and cognitive function.



Day 2 ,25th July, 2023,Evening Session

Dr. Dinesh Kabre, Orthopedic & Spine surgeon, Pioneer and Founder of **Dr. Kabre Chandanwale New Pain Mechanism**, MBBS, MS ,DNB (Ortho) conducted a session on **“AI in Orthopaedics and Spine”**. He talked about how AI is changing the medical field and AI has a huge role to play in the medical sector. He also said that there is a need doctors start accepting the technology and use it for benefits of the society.



Day 3 ,26th July, 2023, Morning Session

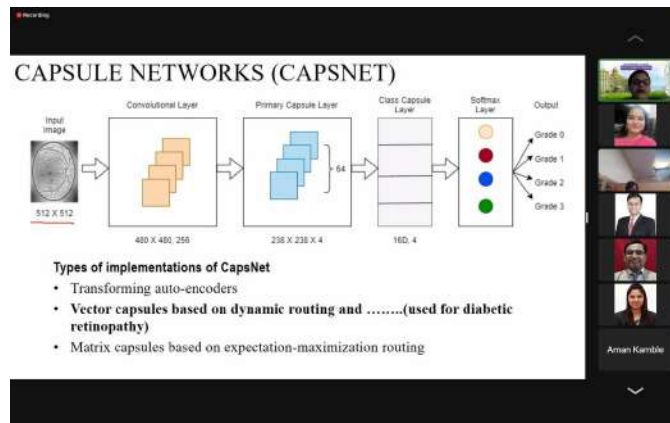
The session on **“Edge Computing for Healthcare”** was delivered by **Prof. Harshad Lokhande**, Assistant Professor- SoC . During the presentation, the speaker highlighted how Edge computing optimizes healthcare by processing and analyzing medical data near its source, leading to accelerated healthcare services, increased efficiency, and better patient outcomes.

Dr Aniruddha Sinha (Principal Scientist TCS Research) - conducted a session on **“Cognitive Analysis using Non-invasive Physiological Sensing”**. He talked about Non-invasive physiological sensing devices that enables cognitive analysis, providing valuable insights into mental processes and emotional responses for research and healthcare applications.

Day 3 ,26th July, 2023,Evening Session

Dr. Jayashree Prasad – Professor, SoC delivered a session on **“Navigating the future of Healthcare with AI”**. The speaker highlighted how research in navigating the future of healthcare with AI explores the

potential of artificial intelligence to revolutionize medical diagnosis, treatment, and patient care, promising more efficient, personalized, and accessible healthcare solutions.



Distinguished Lecturer Talk by **Dr. Omer Inan**, Georgia Institute of Technology , Atlantas USA delivered an auspicious lecture on **“Mental Health Technologies”**. This session was conducted from 6pm - 7pm in online mode. During the presentation, the speaker highlighted the significance of mental health technologies, which include various digital tools like mobile apps, wearables, and virtual reality, aimed at assisting with mental health assessment, therapy, and support.

EMB IEEE Engineering in Medicine & Biology Society Pune Chapter

MIT-ADT University IEEE Student Branch

MIT-ADT UNIVERSITY PUNE INDIIA

IEEE Engineering in Medicine & Biology Society Pune Chapter & IEEE Affordable Healthcare Lab, School of Computing Presents

Date : 26th July 2023 | Time : 6pm to 7pm (IST)

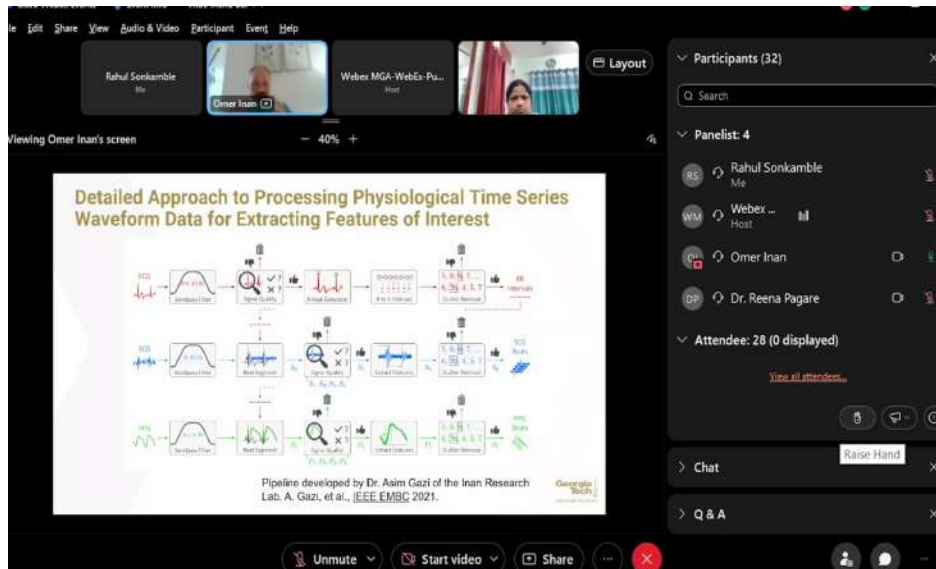
Distinguished Lecture

Topic : Mental Health Technologies

Dr. Omer Inan
Professor, Electrical & Computer Engineering,
Georgia Institute of Technology,
Atlanta, USA

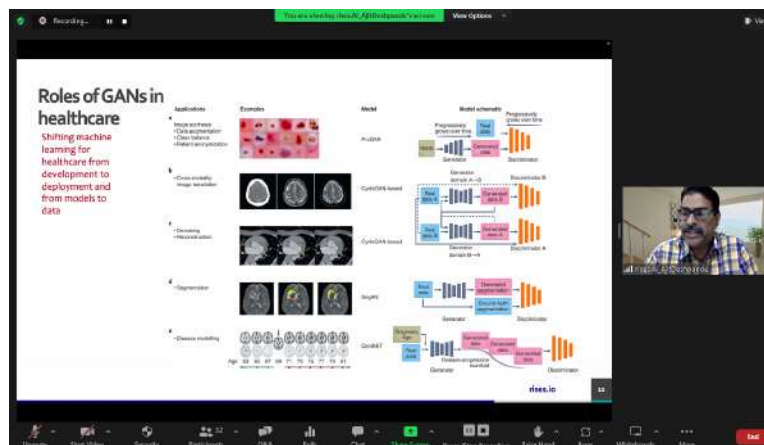
In association with: **IEEE Computational Intelligence Society Pune Chapter**, **IEEE Pune Section**, **IEEE Region 10**, **IEEE SIGHT**

Registration Link: <https://shorturl.at/h0359>



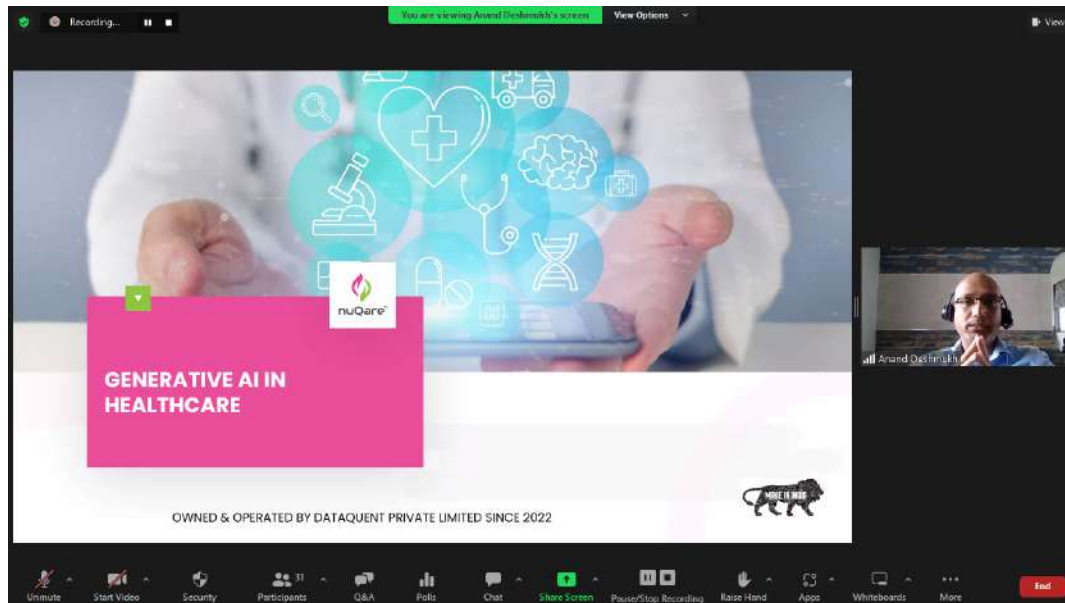
Day 4 ,27th July, 2023 ,Morning Session

Mr. Ajit Deshpande , Founder Rises.io conducted a session on **Shaping the Landscape of Healthcare with the help of AI** . He talked about different algorithms, techniques used in medical domain . He also briefed on GMAI model, multimodal model etc.



A session was conducted by **Mr. Anand Deshmukh , Director Nuqare** on **“Generative AI for healthcare”**. The speaker discussed about the application of artificial intelligence techniques, particularly generative models

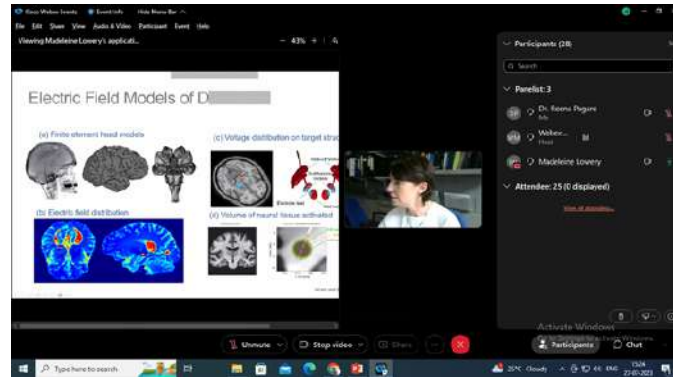
like GANs (Generative Adversarial Networks) and VAEs (Variational Autoencoders), to create synthetic data, images, or models that aid in medical research, diagnostics, drug discovery, and personalized patient treatment plans.



Day 4 ,27th July, 2023, Evening Session

A **Distinguished Lecture Talk** was delivered by **Dr. Madeleine Lowery**, School of Electrical & Electronic Engineering University College Dublin, Ireland on **“Deep Brain Stimulation for Parkinson's Disease”** . She talked about surgically implanting electrodes involved into specific regions of the brain to deliver electrical impulses, which help regulate abnormal brain activity and alleviate motor symptoms such as tremors, rigidity, and bradykinesia. It was a very interactive talk where participants raised queries related to Parkinson's Disease predictions and methods used.





Day 5 ,28th July, 2023 ,Morning Session

Prof M J Khurjekar, Ex VIIT/VIT and presently IEEE Pune Section IMS chair , gave a talk on **ECG & DEMO on ECG** . The speaker discussed how AI algorithms are leveraging ECG where AI aims to enhance diagnostic accuracy, detect cardiac abnormalities, and assist healthcare professionals in providing timely and effective cardiovascular care.



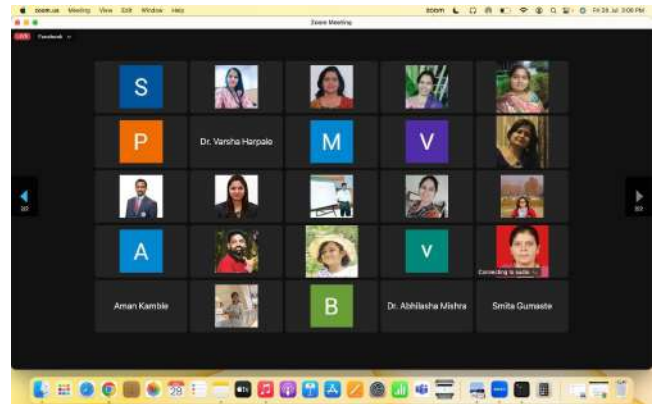
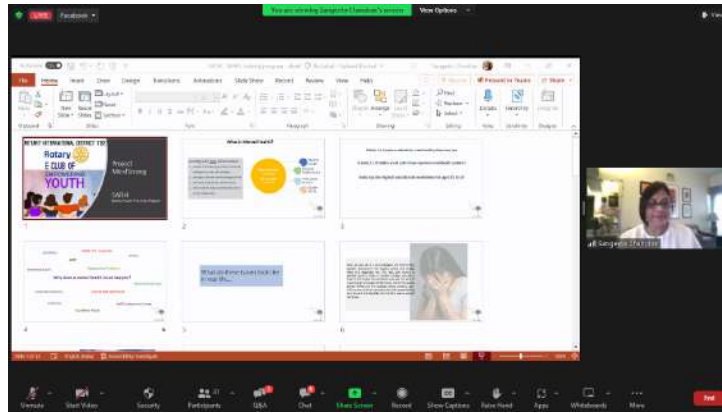
The **training session on CPR** was delivered by **Mr. Avinash Shendage & team members**, CPR Healthcare Training Academy. CPR Healthcare Training Academy is a reputable institution specializing in comprehensive CPR (Cardiopulmonary Resuscitation) training for healthcare professionals and the general public. With experienced instructors and state-of-the-art facilities, they equip individuals with life-saving skills to respond to emergency situations effectively. He also gave the difference between cardiac arrest and heart attack. Mr. Avinash gave training on how to use the AED kit.



Day 5 ,28th July, 2023 ,Evening Session

Ms. Sangeeta Chandran , Global head TCS Care delivered the session on the topic **Mental Wellbeing .**

She gave valuable insights on the integration of artificial intelligence and machine learning technologies to enhance mental health services and support. She shared different case studies and the challenges children face in this digital world. The talk was very interactive and informative.



Valedictory function was scheduled on 28th July . Mr. Mandar Khurjekar was present for the valedictory . He shared his insights on IEEE Pune Section different societies and chapters . The participants shared their feedback and were very happy with the content of the FDP and the quality of speakers of FDP which were National as well as International.



Total 60 participants had attended the FDP, AI in Healthcare. Since it was conducted in hybrid mode, 40 participants joined online whereas 20 participants joined the sessions physically. Out of total 60 participants, 40 participants are IEEE members whereas 20 participants are non-IEEE members belonging to various institutes.



MIT-ADT University
IEEE Student Branch



IEEE Engineering in
Medicine & Biology Society
Pune Chapter



**MIT-ADT
UNIVERSITY**
PUNE, INDIA
A 400+ Year Old Institution

MIT Art, Design & Technology University, Pune
MIT School of Computing

ONE WEEK FACULTY DEVELOPMENT PROGRAM (FDP)- HYBRID MODE ON

“Artificial Intelligence in Health Care”

Date : 24th to 28th July 2023 | Venue: N518, IT Building, SOC

GUEST SPEAKERS



Prof. Dr. Veeky Beths
Professor Cognitive Neuroscience Lab,
BITS Pilani, K. K. Birla, Goa



Dr. Harish Patankar
Director, Keshavnand
Hair & Skin Care Pvt. Ltd.



Ms. Sangeeta Chandran
Global Head, TCS Care



Mr. Avinash Shendage
Business Associate,
Criticom Medical Systems LLP



Dr. Omer Inan
Professor, Electrical & Computer Engineering,
Georgia Institute of Technology,
Atlanta, USA



Dr. Madeleine Lowery
Professor, School of Electrical &
Electronic Engineering,
University College Dublin, Ireland

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