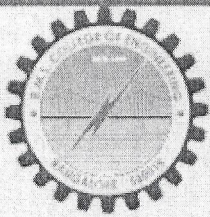


IMPORTANCE OF CLINICAL QUALITY ASSURANCE & FDA PROCESS IN MEDICAL ELECTRONICS



MS. LAKSHMI ACHUTA

**PRINCIPAL STRATEGIC ADVISOR - BIOTECH,
PHARMACEUTICALS & MEDICAL DEVICES**

**MONDAY
12TH JUNE, 2023**

VENUE: ML 602

**TIME
11.30 AM ONWARDS**

Faculty Coordinators:

Dr. Suma M S

Dr. Jisha P

Organised by:

**Dept. of Medical Electronics Engineering,
BMSCE**



B.M.S. College of Engineering, Bangalore - 560019
Department of Medical Electronics Engineering

Event: Extension Lecture Series -5

Date: 12-06-2023

Time: 11-30AM TO 12.30PM

Topic: "Importance of Clinical Quality Assurance & FDA Process in Medical Electronics"

by Ms.Lakshmi Achuta, Principal Strategic Advisor-Biotech, Bengaluru. Venue: ML-602

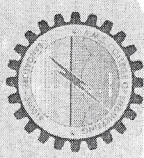
Coordinator: Dr. Jisha.P, Asst. Professor and Dr. Suma.M. S, Professor, Dept. of ML, BMSCE.

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Shireesha Gowda. Y.	MD	8431750853	shireesha.ml21@bmsce.ac.in	<u>Shireesha</u>
Deepthi. C. J	MD	7975692211	deepthi.candaveer.ml21@bmsce.ac.in	<u>Deepthi</u>

SS/TIT



**B.M.S College Of
Engineering, Bangalore**

Department of
Medical Electronics Engineering

U-Serv

**19ML6PCMD
MEDICAL DEVICE DEVELOPMENT
Industry Study Session on
Purpose Launchpad Health
Innovation Framework & its
Application**

Coordinator

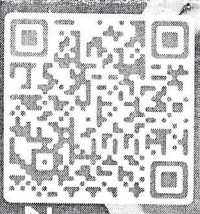
**Dr. Abhishek Appaji
Associate Professor,
Medical Electronics**

Engg
abhishek.ml@bmce.ac.in

Guest Speaker

Prof. Micheal Friebe

Image Guided Surgery / Catheter Technologies, Faculty of
Electrical Engineering, Institute of Medical Engineering, Otto-
von-Guericke-Universität Magdeburg, Germany



Scan to join
Zoom Online
**June 9, 2023
630PM IST**



No. of participants - 50



**B.M.S College Of
Engineering, Bangalore**

Department of
Medical Electronics Engineering

VI-Sem

19ML6PCMD
MEDICAL DEVICE DEVELOPMENT
Industry Study Session on
Case Study on Medical Device
Development and Deployment



Coordinator

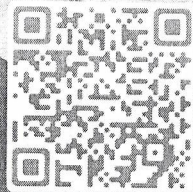
Dr. Abhishek Appaji
Associate Professor,
Medical Electronics
Engg

abhishek.ml@bmsce.ac.in

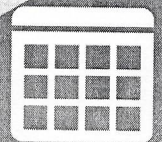
Guest Speaker

A Vijayarajan

Founder & CTO
InnAccel Technologies Pvt Ltd, Bengaluru



Scan to join
Zoom online



May 16, 2023
630PM IST

No. of participants - 45



BMS College Of
Engineering, Bangalore

Department of
Medical Electronics Engineering

VI-Sem

Coordinator

Dr. Abhishek Appaji
Associate Professor,
Medical Electronics
Engg
abhishek.ml@bmsce.ac.in



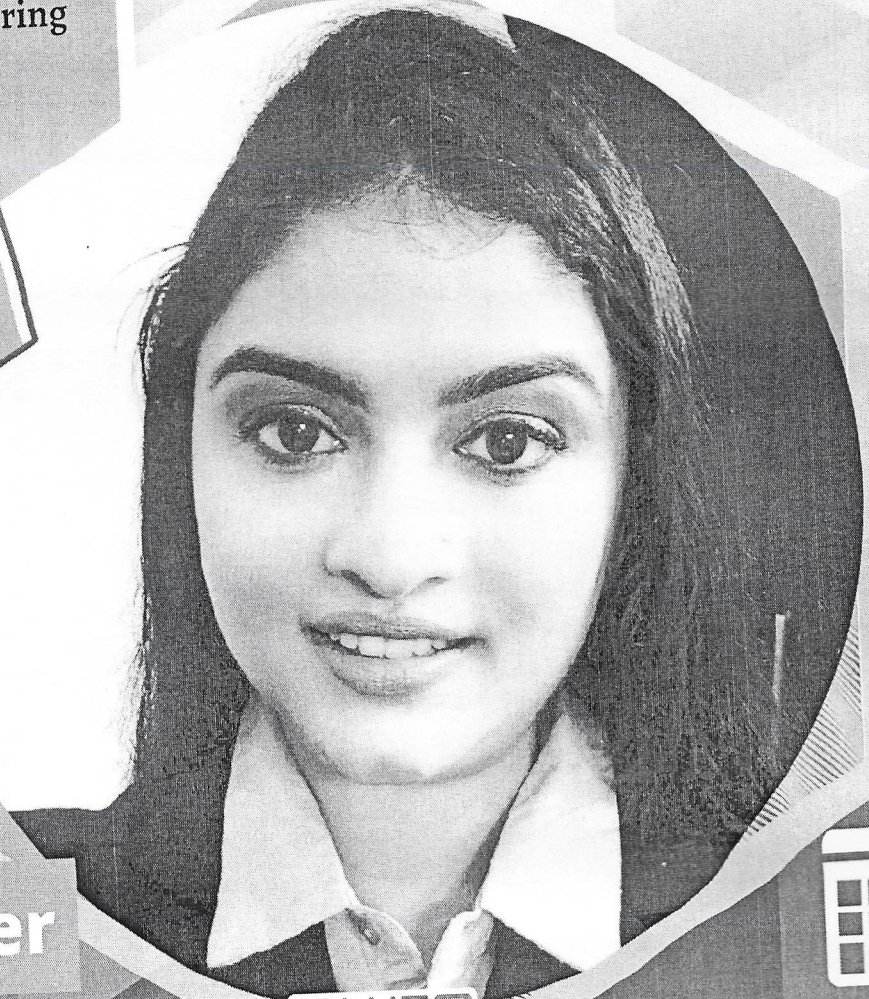
Guest Speaker

Pooja Kadambi

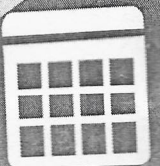
Head of Innovation & Clinical Research R&D
Turtle Shell Technologies Pvt Ltd / DOZEE, Bengaluru

19ML6PCMDD

MEDICAL DEVICE DEVELOPMENT Industry Study Session on Journey of Indian MedTech Startups



Scan to join
Zoom online



May 5, 2023
7PM IST



**B.M.S College Of
Engineering, Bangalore**

Department of
Medical Electronics Engineering

VI-Sem

**19ML6PCMD
MEDICAL DEVICE DEVELOPMENT
Industry Study Session
on
Medical Device Software**



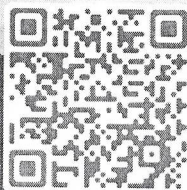
Coordinator

Dr. Abhishek Appaji
Associate Professor,
Medical Electronics
Engg
abhishek.ml@bmsce.ac.in

Guest Speaker

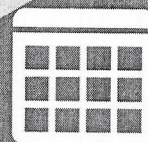
Dheeraj B N

Lead Application Developer,
InnAccel Technologies Pvt Ltd, Bengaluru



Scan to join
Zoom online

**May 3, 2023
7PM IST**



Industry Study Session on Medical Device Software

Title of the Talk: Beyond Code: The Unique Challenges of Medical Device Software Development

Speaker : Mr. Dheeraj B N , Lead Application Developer, InnAccel Technologies Pvt Ltd, Bengaluru

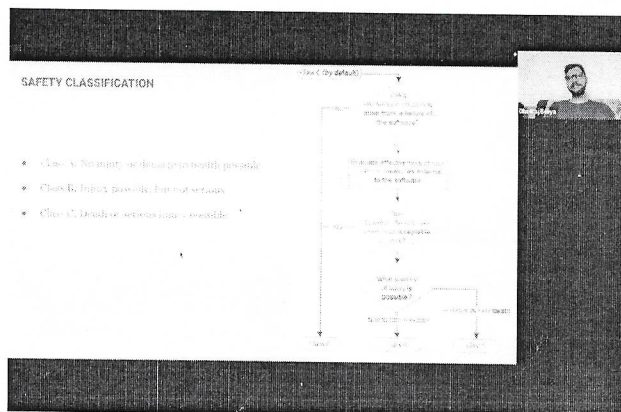
Coordinators: Dr. Abhishek M Appaji, Associate Professor, Medical Electronics Engg.

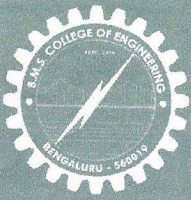
Date: May 3, 2023

This industry study session was held on May 3, 2023. Mr. Dheeraj B N spoke at this online event, which was held on the Zoom platform. The speaker began by answering questions from the audience about the role of software in the medical industry. Following that, the speaker discussed the many facets of medical software development. SaMD and SiMD, the two primary forms of software, were defined. The fundamental distinctions between designing software for medical devices and software for general usage were highlighted. The speaker also discussed the safety considerations that must be made while building software for medical devices. Every clause of the IEC 62304 standard was thoroughly described by the speaker. The IEC 62304 standard specifies the life cycle requirements for medical device software. It contains nine clauses, and the speaker went over each of them in greater depth. The discussion was followed by a Q&A session in which participants interacted with the speaker and asked numerous questions. The queries concerned how to get qualified for medical software development, what certifications are available, how to transition to a software job, and what role AI will play in the medical device domain. The participants were interactive, and the session was extremely insightful.

Number of participants: 49

Photos:





BMS College Of Engineering

Department of Medical Electronics Engineering

Medical Electronics and Forensics in Criminal Investigation

A Talk by

Mr. Phaneendar B N

**Court Commissioned Forensic Expert
and Advocate**



4 th May

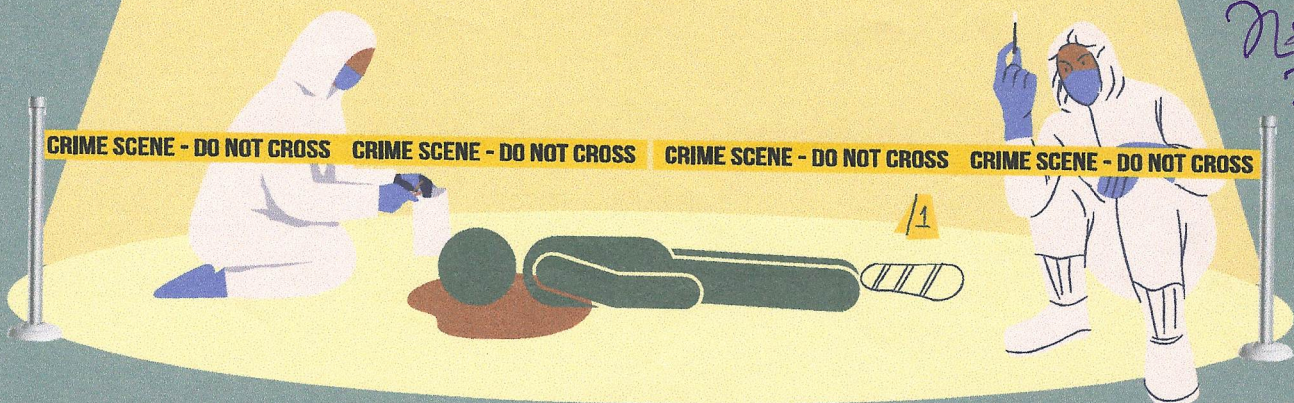


10 am



**ML 602
PJ BLOCK 6th Floor**

-NB
28/4/23

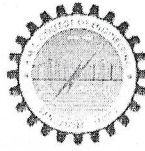


Scan to register!



**FACULTY CO-ORDINATOR
DR.JISHA P**

**FACULTY CO-ORDINATOR
DR.SUMA M S**



B.M.S. COLLEGE OF ENGINEERING – BENGALURU-19
Department of Medical Electronics Engineering

21/04/2023

From,

Dr. Jisha P & Dr. M S Suma
Assistant Professor & Professor
Department of Medical Electronics Engineering
B.M.S. College of Engineering
Bengaluru -19.

Through: Head of the Department
Department of Medical Electronics Engineering

To,

The Principal
B.M.S. College of Engineering, Bengaluru-19

Respected Sir,

Medical Electronics &
Regarding: - Permission to conduct “Forensics in Criminal Investigation” – An expert talk session for 6th Semester Students”

We would like to seek your permission to conduct an expert talk by Mr. Phaneendar B N (Court Commissioned Forensic Expert and Advocate, Clue4 Evidence Forensic Lab, Bengaluru) for 6th Semester Students of Medical Electronics Engineering Department on 4th May 2023 (10. 00 am to 11.00 am). We do believe that this endeavor may motivate our students to explore the relevance of Forensic Science in present day to day life.

Hence, We request you to kindly release the fund as per college norms for the conduction of this event. The amount may kindly be advanced towards the recurring account budget for the financial year 2023-24. Poster of the event is enclosed herewith.

Kindly permit us to conduct the event and oblige

Thank you

Yours sincerely


Dr. Jisha P & Dr. M S Suma

Department of Medical Electronics Engineering
BMSCE, Bengaluru-19.

Approved
25/4/23

Forwarded for the needful
21/4/2023

Report- Medical Electronics & Forensics in Criminal Investigation

Medical Electronics & Forensics in Criminal Investigation was a talk conducted by the Department of Medical Electronics Engineering of BMS College of Engineering, mainly for the students of the 6th semester in conjunction with their course on Forensic Science. The talk was held to introduce the students to the principles followed in the field of forensics and crime scene investigation.

The resource person who conducted the talk was Mr. Phaneendar B N, a court-commissioned forensic expert and advocate. He is the CEO of Clue4 Evidence Forensic Lab. The session was held on the 4th of May 2023 at CR 602 in the Department of Medical Electronics Engineering, from 10 AM- 12 PM.

Description:

The speaker introduced the students to the basic principles of Forensic Science and stressed that evidence is always left behind at a crime scene. He spoke about the nuances of document examination in forensics and all the details to be considered. He enlightened the students about the impact the subconscious mind has on a person's handwriting, and how it can be used as evidence. He walked the participants through a few interesting cases that he worked on. He also demonstrated the process of picking up fingerprints. The session was an interactive one. Questions about the involvement of digital factors and the risks of the field were discussed.

Outcome:

At the end of the session, the students were able to

1. Appreciate the importance of document examination in forensics.
2. Understand the risks and pitfalls involved in the field.
3. Understand how they, as medical electronics engineers, can fit into the field of forensics.

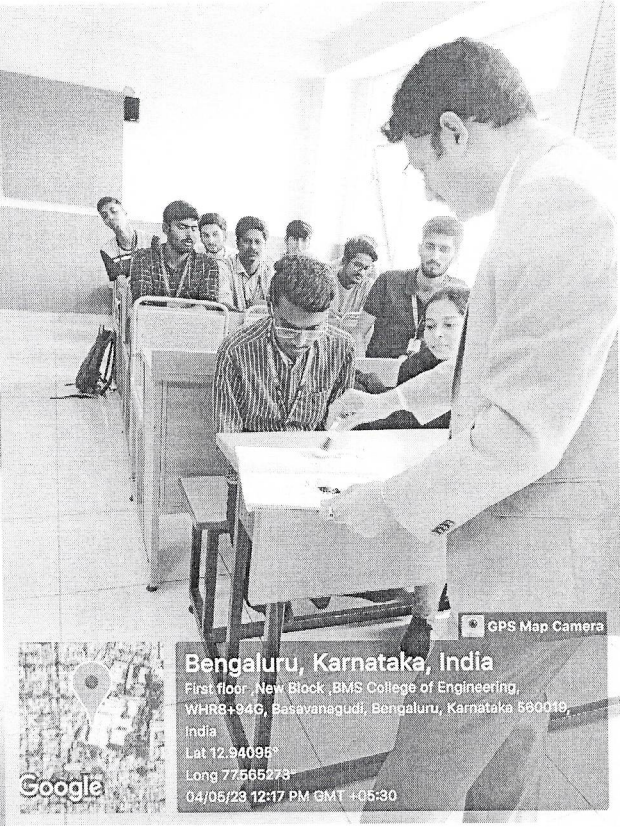
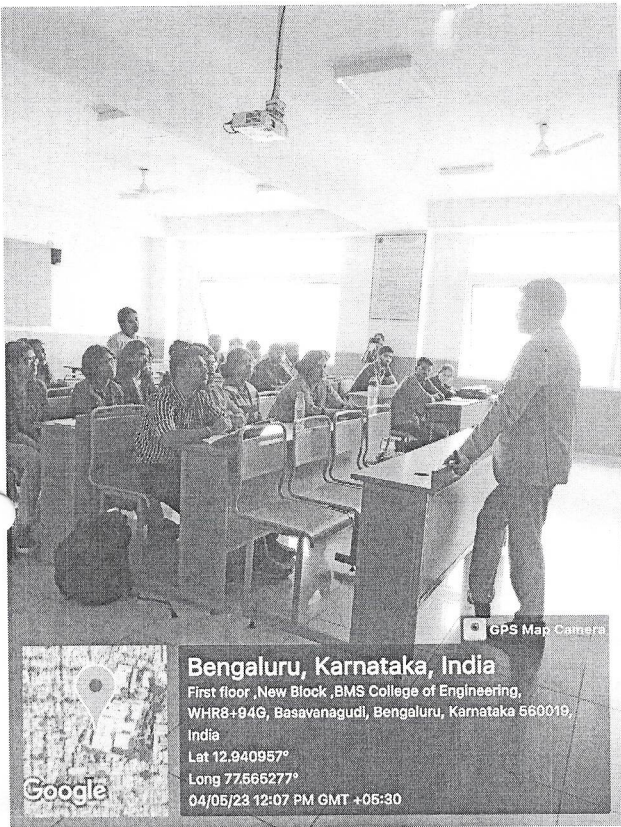
Resource Person:

Mr. Phaneendar B N,
Court-commissioned forensic expert and advocate
Clue4 Evidence Forensic Lab, Bangalore.

Faculty Coordinators:

1. Dr Jisha P., Assistant Professor, Department of Medical Electronics Engineering
2. Dr Suma M. S., Professor, Department of Medical Electronics Engineering

Photos of the Event:





B.M.S. College of Engineering, Bangalore – 560019
Department of Medical Electronics Engineering

Event: Extension Lecture Series -3

Date: 04-05-2023

Time: 10-00AM TO 11.00AM

Topic: “Medical Electronics and Forensics in Criminal Investigation” by

Mr.Phaneendar.B.N Court Commissioned Forensic Expert and Advocate, Bengaluru.

Coordinator: Dr. Jisha.P, Asst. Professor and Dr. Suma.M. S, Professor, Dept. of ML, BMSCE.

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37	Umme Hani	Medical Electronics	8088379244	umme.hani.ml20@bmsce.ac.in	<i>Umme Hani</i>



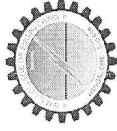
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28	Taibheem	Medical Electronics	8296002023	Taibheem.ml20@bmsce.ac.in	Taibheem
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38. Shiba-M.
 34. PANDURANG KULKARNI
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 9900432101

Faculty Co-ordinators: Dr. Jisha. P and Dr. Suma.M.S

HOD, MED.ELENS ENGG.

DR. JISHA PANDURANG KULKARNI
 Professor & Head
 Dept. of Medical Electronics Engineering
 B.M.S. College of Engineering,
 Bengaluru - 560 019, INDIA



B.M.S. College of Engineering, Bangalore - 560019
Department of Medical Electronics Engineering

Organizes

EVENT: EXTENSION LECTURE SERIES

REF: BMSCE/UG/ML/2023/ELS-2

**Event: "Ophthalmology Devices Eco system -
Diagnosis and treatment"**

By

Venkatakrisnan.S. CTO & Head- R & D, Forus Health Pvt Ltd, Bengaluru.

Date: 05 - 05 -2023

Time: 12.00Noon-01.00PM

Venue: ML-603, 6th Floor, New Platinum Jubilee Academic Block, BMSCE.

**Faculty Coordinator
Dr.Joshi Manisha. S**

Manisha S
20/4/2023

HOD

Medical Electronics Engineering

Dr. JOSHI MANISHA S

Professor & Head

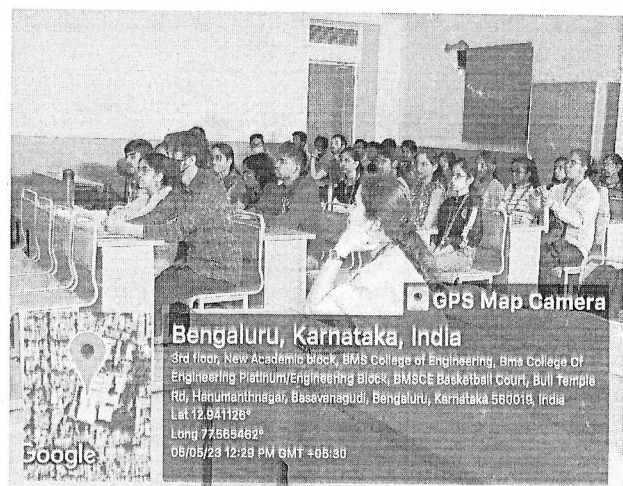
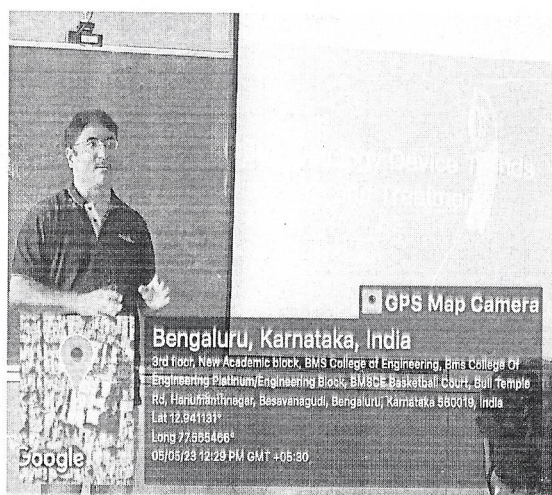
Dept. of Medical Electronics Engineering
B.M.S. College of Engineering,
Bengaluru - 560 019, INDIA

Manisha S
20/4/2023

Report on Expert talk on 'Ophthalmology Devices Eco system- Diagnosis and treatment':

During an interactive session expert **Venkatkrishnan S** expressed the need for research and device development in the certain areas related to Ophthalmology. Fundus imaging with Trans Planar illumination, Confocal Scanning Laser Ophthalmology, Multi Spectral Imaging, Interferometry, OCT (Optical Coherence Technology) were discussed during the discussion. The Interferometry for Dry Eye Analysis and the scope of AI in Ophthalmology was explained by the expert.

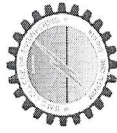
The students were interactive during the session to understand the latest trends in eye care technology and future scope.



Manisha Joshi
11/5/2023
Faculty Coordinator

Dr. Joshi Manisha S

Dr. JOSHI MANISHA S
Professor & Head
Dept. of Medical Electronics Engineering
B.M.S. College of Engineering,
Bengaluru - 560 019, INDIA



B.M.S. College of Engineering, Bangalore – 560019
Department of Medical Electronics Engineering

Organizes

Attendance Event: Extension Lecture Series -2

Date: 05-05-2023

Time: 10-00AM TO 5.00PM

Topic: “Ophthalmology Devices Eco system – Diagnosis and treatment” by

Venkatakrishnan.S. CTO & Head- R & D, Forus Health Pvt Ltd, Bengaluru.

Coordinator: Dr.Joshi Manisha S, Professor & HOD, Dept. of ML, BMSCE.

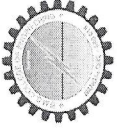
Sl. No.	Participants Name	Department	Mobile	Email-ID	Male/Female	Signature
1	PRATHIKSHA HARISH	Medical Electronics	8618133529	prathiksha.ml20@bmsce.ac.in	Female	
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Harsha Kumar N
Faculty Coordinator
 11/5/2023

Harsha Kumar N
HOD, MED.ELNS.ENGG.
 11/5/23

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 Professor & Head
 Dept. of Medical Electronics Engineering
 B.M.S. College of Engineering,
 Bengaluru - 560 019, INDIA



B.M.S. College of Engineering, Bangalore - 560019
Department of Medical Electronics Engineering

Organizes

EVENT: EXTENSION LECTURE SERIES

REF: BMSCE/UG/ML/2023/ELS-1

Event: Soft skill Training session
"Present to Impact"

By

H.V.VISHVESH

Director and Facilitator, ARIJU Skill Development Academy

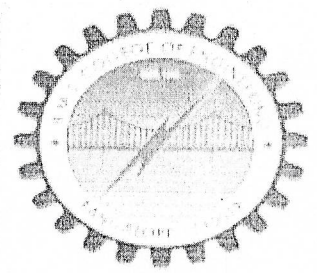
Date: 10 - 01 -2023

Time: 11.15AM-12.15PM

Venue: ML-603, 6th Floor, New Platinum Jubilee Academic Block, BMSCE.

Faculty Coordinator
Dr.Jisha.P


HOD
Medical Electronics Engineering
B.M.S. College of Engineering,
Bangalore - 560 019, INDIA



Soft Skill Training Session

“Present to Impact”

by

H. V. VISHVESH

Director and Facilitator

ARIVU Skill Development Academy

Department of Medical Electronics Engineering

B.M.S. COLLEGE OF ENGINEERING

BENGALURU-19

Date: 10th January 2023

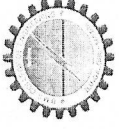
Time: 11. 15 am to 12.15pm

Venue: ML-603

Faculty coordinator: Dr. Jisha P, Assistant Professor

Chief coordinator: Dr. Joshi Manisha S

Professor and Head, Department of Medical Electronics Engineering



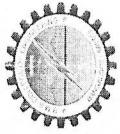
B.M.S. College of Engineering, Bangalore – 560019
Department of Medical Electronics Engineering

Organizes

Attendance Event: Soft skill Training session

“Present to Impact” By H.V. VISHVESH, Date: 10 - 01 -2023, Time: 11.15AM-12.15PM

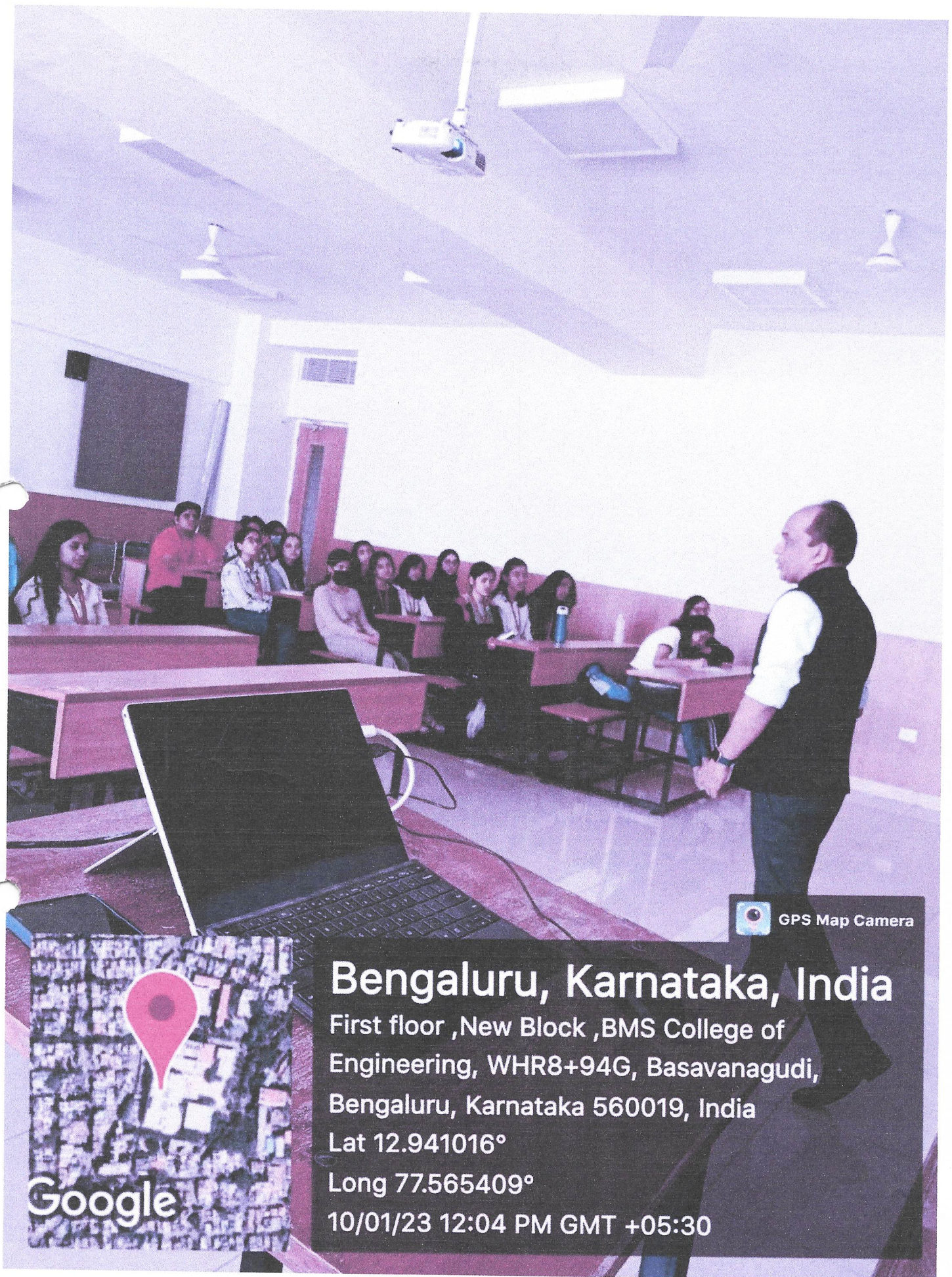
Sl. No.	Participants Name	Department	Mobile	Email-ID	Male/Female	Signature
1	Varuni Gorkalkar	ML	8095971520	varuni.ml21@bmsce.ac.in	Female	
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32	Pritam A.J	ML	9606888929	Pritam.ml21@bmsce.ac.in	FEMALE	Pritam A.J



GPS Map Camera

Bengaluru, Karnataka, India

First floor ,New Block ,BMS College of
Engineering, WHR8+94G, Basavanagudi,
Bengaluru, Karnataka 560019, India

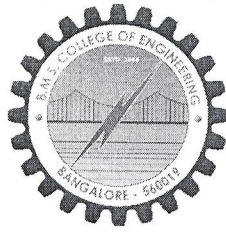
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Long 77.565409°

10/01/23 12:04 PM GMT +05:30



BMS COLLEGE OF ENGINEERING



DEPARTMENT OF MEDICAL ELECTRONICS ENGINEERING

A HANDS-ON WORKSHOP ON fMRI IMAGE ANALYSIS

DATE: 9th September

DURATION: 10:30 AM – 4:30PM

GUEST: Mrs Usha, Visiting Professor in UVCE, Bangalore

VENUE: ML 603 Computational Lab, 6th Floor, Platinum Jubilee Block

ARRANGED BY: Dr.K.Vijayalakshmi (Professor)

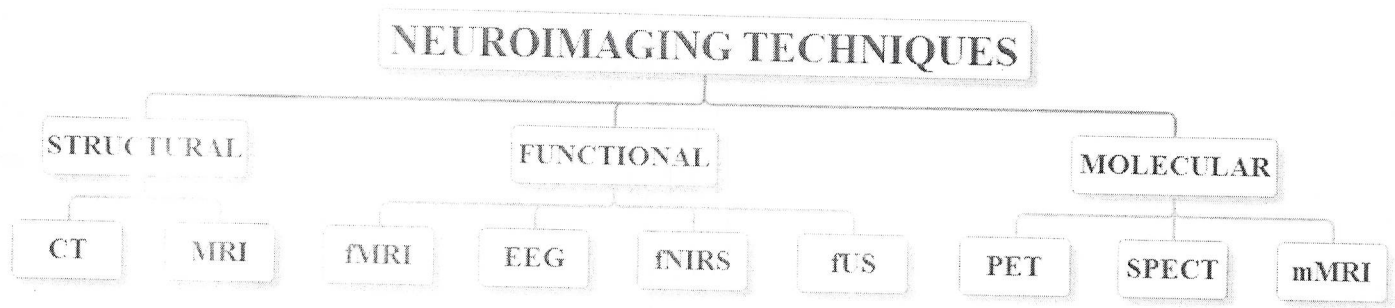
EVENT SUMMARY:

As a part of the Neuroimaging and brain mapping course, an interaction session with Mrs. Usha Visiting professor, EC Dept UVCE, Bangalore, UG and PG Students was held on 9th September 2022 from 10:30 AM to 4:30 PM. (The list of participants is enclosed as an annexure).

The session was intended to gain insight on fMRI image analysis and share their experiences with all of us. The points discussed are as below:

- ❖ Neuroimaging basics
- ❖ Resting state of fMRI
- ❖ Pre-processing
- ❖ Analysis

NEUROIMAGING TECHNIQUES



fMRI

Blood Oxygen Level Dependent (BOLD) functional magnetic resonance imaging (fMRI) depicts changes in deoxyhemoglobin concentration consequent to task-induced or spontaneous modulation of neural metabolism. Functional Magnetic Resonance Imaging (fMRI) is a class of imaging methods developed in order to demonstrate regional, time-varying changes in brain metabolism. These metabolic changes can be consequent to task-induced cognitive state changes or the result of unregulated processes in the resting brain.

Basics of fMRI

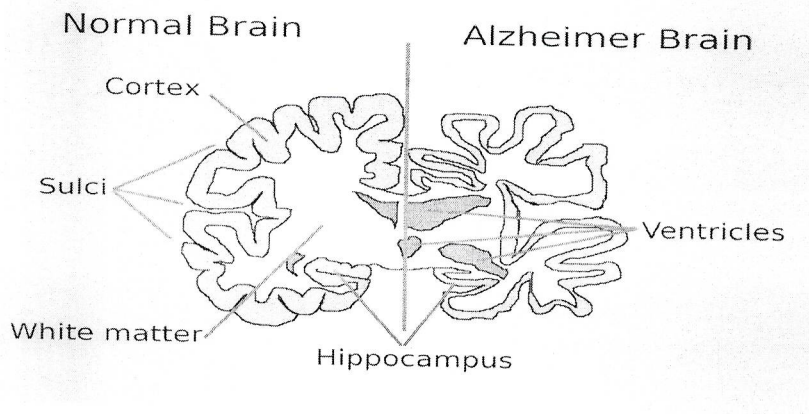
fMRI is of course based on MRI, which in turn uses Nuclear Magnetic Resonance coupled with gradients in magnetic field to create images that can incorporate many different types of contrast such as T1 weighting, T2 weighting, susceptibility, flow, etc.

The most common MRI sequences are T1-weighted and T2-weighted scans. T1-weighted images are produced by using short TE and TR times. The contrast and brightness of the image are predominately determined by T1 properties of tissue. Conversely, T2-weighted images are produced by using longer TE and TR times.

Types of fMRI

- ❖ Task based
- ❖ Resting-state-based

Two parameters were considered for this condition i.e the subject with normal brain conditions and one more subject with Alzheimer's disease where Alzheimer's disease is a brain disorder that slowly destroys memory and thinking skills and, eventually, the ability to carry out the simplest tasks.



PRE-PROCESSING STEPS

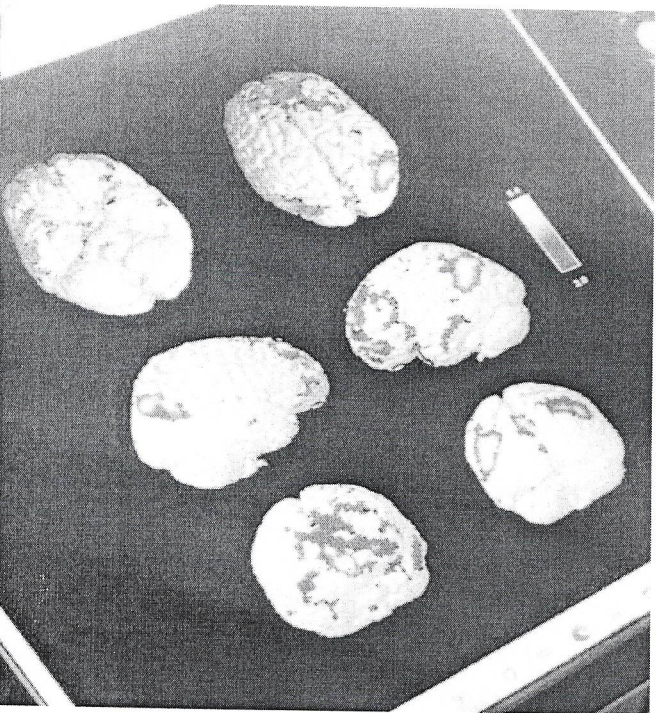
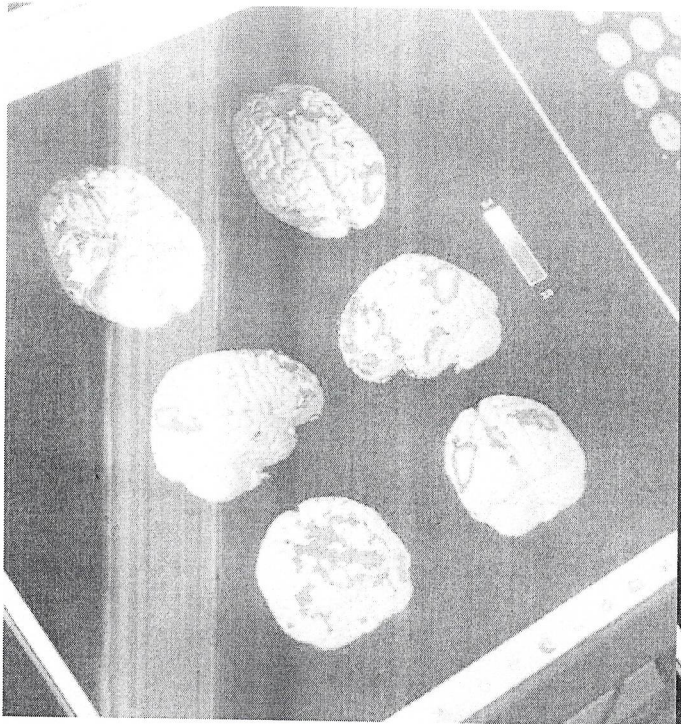
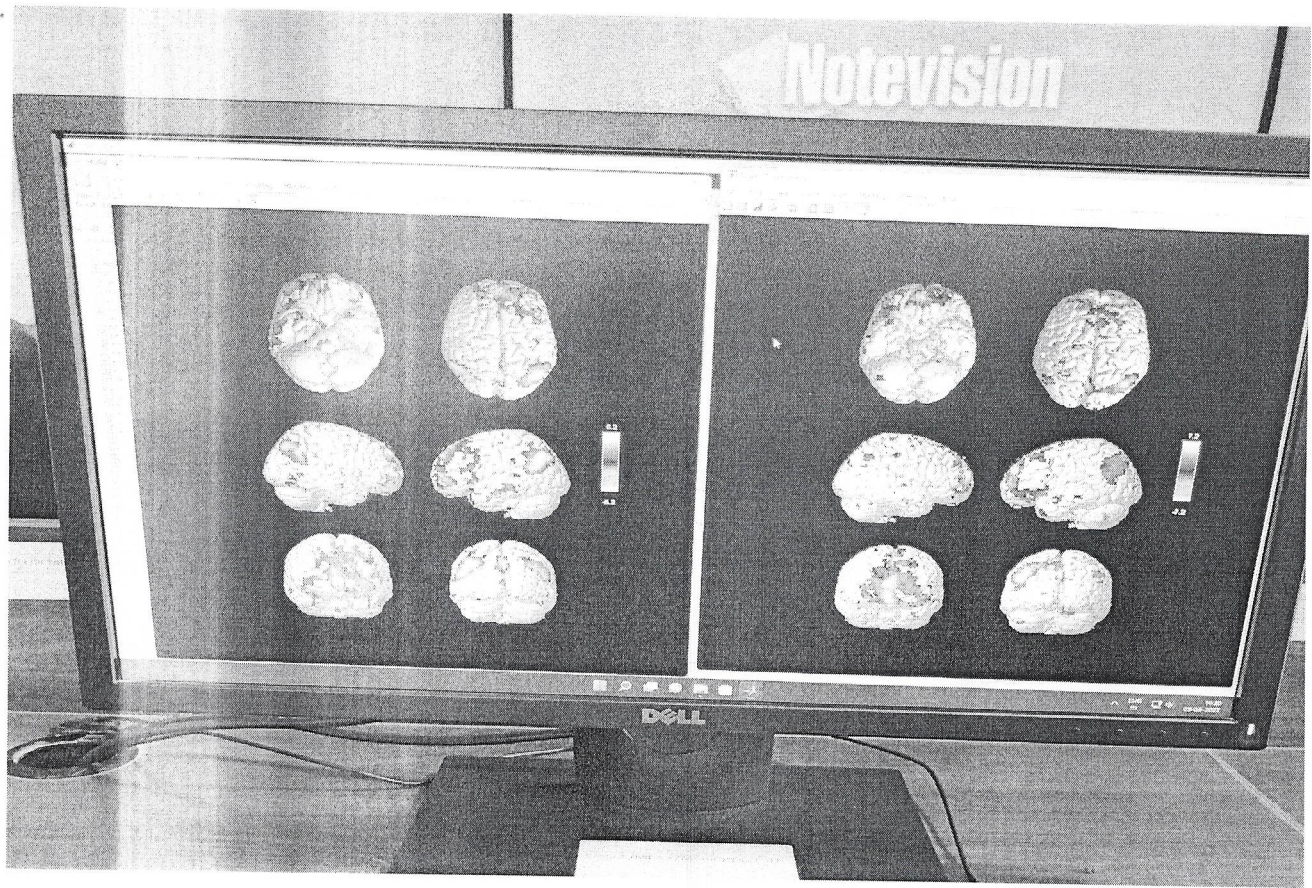
- ❖ Set the origin
- ❖ Image quality and orientation
- ❖ Removal of data points
- ❖ Time slice correction
- ❖ Realignment
- ❖ Co-register with structural images
- ❖ Normalize
- ❖ Smoothing

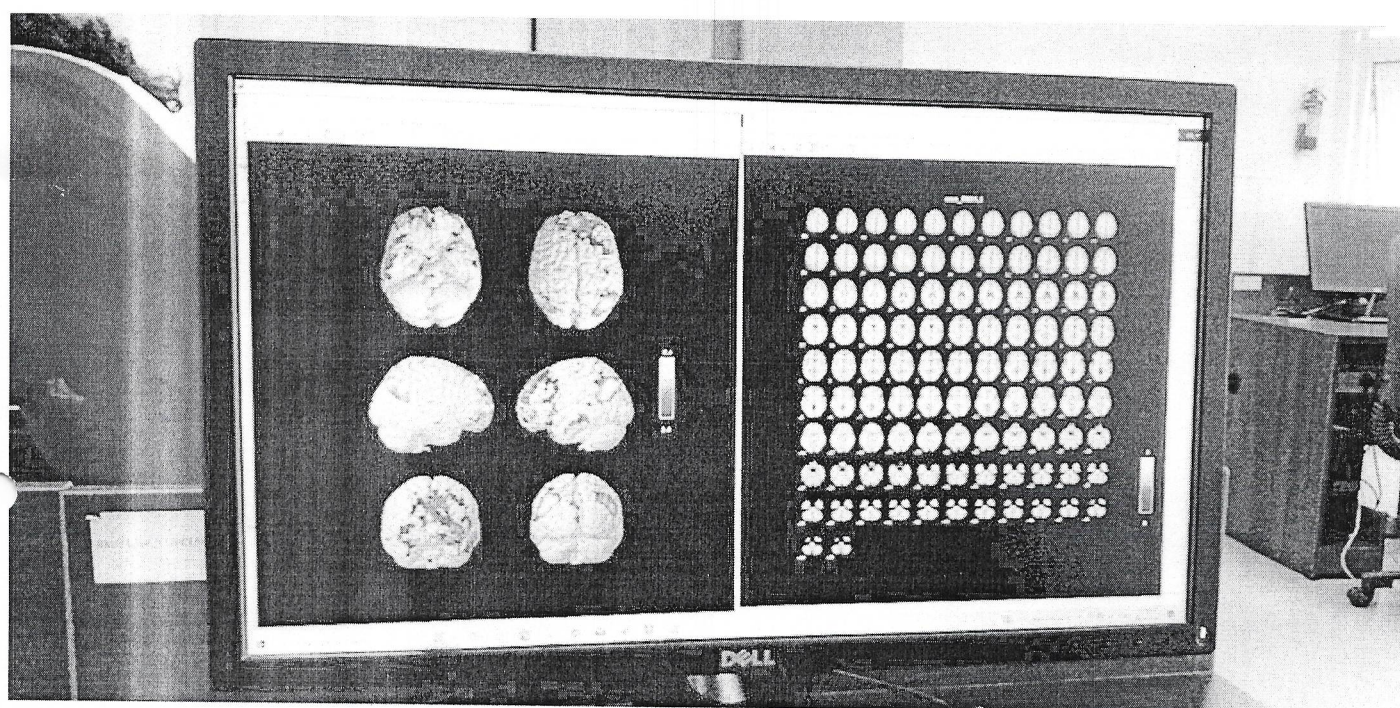
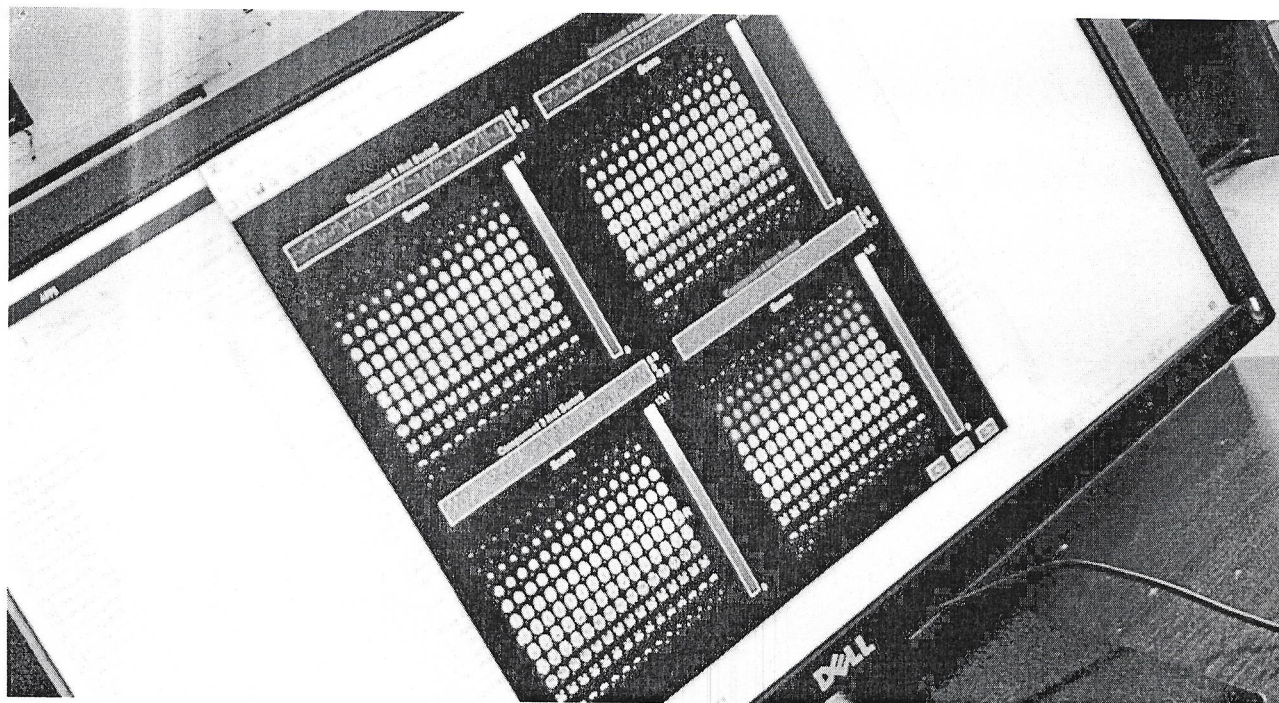
ANALYSIS

Types of analysis

- ❖ Group analysis
- ❖ Individual analysis
- ❖ Seed based analysis
- ❖ Independent component analysis
- ❖ Resting state analysis

OUTPUTS





HIGHLIGHTS OF THE SESSION



Annexure:

Host: Dr.K.Vijayalakshmi (Professor)

Sl.no	List of Participants
1	Aakanksha Mahesh Veterkar
2	Aqila Nazifa
3	Likhitha D Atada
4	Nisha N
5	Preksha A Das
6	Supritha S