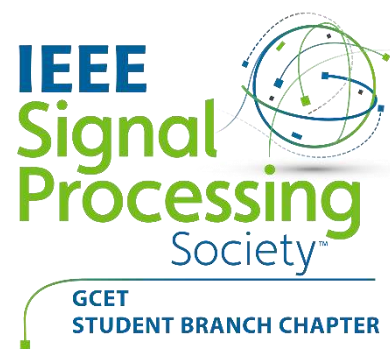
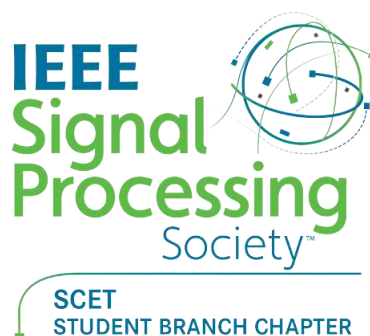
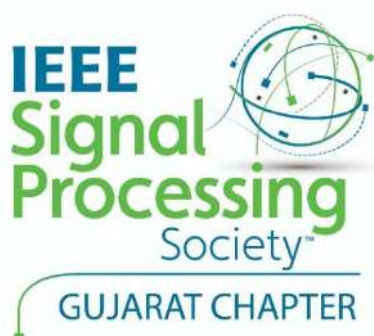


**A Report**  
**on**  
**Seasonal School on Multi-Dimensional  
Signal Processing Tool & Tech 2022**

**Event Date: 11<sup>th</sup> - 13<sup>th</sup> August, 2022**

Organized by:

**IEEE SPS Gujarat Chapter,  
IEEE SCET SB,  
IEEE SPS SCET SBC & IEEE SPS  
GCET SBC**



# Seasonal School on Multi-Dimensional Signal Processing, Tools & Tech 2022



11th - 13th October



5:00 PM to 8:00 PM IST



No Registration Fees



E-Certificate will be Provided



Attractive prizes during each session for active participants

## STUDENT COORDINATORS

- Takshil Kunadia : +91 6354 294 159
- Muskan Jhawar : +91 72020 95213
- Abanob Bhanu : +91 70437 75099
- Aashish Kumar : +91 92057 28154

## FACULTY COORDINATORS

- Prof. Mita Paunwala
- Prof. Ketki Pathak
- Prof. Arpan Desai

ONLINE MODE

SCAN TO REGISTER



## **Team Behind the Event:**

- Prof. Chirag Paunwala, Chair, IEEE SPS GS
- Prof. Neeta Chapatwala, Treasurer, IEEE SPS GS
- Prof. Kavindra Jain, Advisor, IEEE GCET SPS SBC

## **Faculty Co-Ordinators:**

- Prof. Mita Paunwala, Vice Chair, IEEE SPS GS
- Prof. Ketki Pathak, Branch Councillor, IEEE SCET SB
- Prof. Apran Desai, Secretary, IEEE SPS GS

## **Student co-ordinators:**

- Abanob Bhanu, Chair, IEEE SCET SB
- Aashish Kumar, Chair, IEEE SPS GCET SBC
- Muskan Jhawar, Secretary, IEE SCET SB
- Takshil Kunadia, Vice Chair, IEEE SCET SB

## **Session Chairs:**

- Prof. Mukesh Bhesaniya, GCET
- Prof. Falgun Thakkar, GCET
- Prof. Vandana Joshi, SCET
- Prof. Rakesh Patel, GCET

## Event Details:

**Event Type:** Talk Series

**Event Mode:** Online

**Event Platform:** Webex Link

- **Day 1:**  
(<https://ieeemeetings.webex.com/ieeemeetings/j.php?MTID=m8164a2f0f415f46fd5826d037fafeeba>)
- **Day 2:**  
(<https://ieeemeetings.webex.com/ieeemeetings/j.php?MTID=m46686b7b64690c07a9480330c1ea3d75>)
- **Day 3:**  
(<https://ieeemeetings.webex.com/ieeemeetings/j.php?MTID=mdd01ccf4e7423f00cbd8acf16eb73302>)

**Event Category:** Technical Event

**Event Date and Time:**

- 11<sup>th</sup> October 2022 to 13<sup>th</sup> October 2022,
- 5:00 PM to 8:00 PM IST

**Event Accessibility:** For registered participants

**Event Related Links:**

**Registration Link:** <https://forms.gle/bDTWuQUCHwdFUamn6>

**Website:** <https://ieescetsb.wixsite.com/seasonalschool2022>

# Event Insight:

## About the event:

This program aims at introducing students to contemporary multidimensional signal processing trends and breakthroughs in the domain of imaging and signal processing with real time processing with recent tools and techniques. Students will get the opportunity to learn from industry-leading professionals and world-class academics. Students will discover particularly timely (or ‘hot’ topics) in addition to learning and building on fundamentals that underlie the signal processing domain. Apart from expert talks, the emphasis will also be on technical workshops that focus on hands-on application.

Students will get a chance to learn present-day tools actively utilized in the signal processing discipline. Beyond the teaching and learning exercise, panel discussion and open forums will serve as a platform for students and domain experts to interact, providing an excellent opportunity for students to brainstorm further on relevant topics.

By the end of the program, students will discover the following:

1. Recent trends in signal processing
2. Foundational methodologies that underlie the above mentioned signal processing specializations
3. A wide range of domains where signal processing is prevalent.

## Outline on Topics to be covered:

- Fundamentals of Biomedical Signal Processing,
- Recent advancements in Modern Signal Processing,
- Deploying Signal Processing applications on Cloud,
- Recent tools for Practical Signal Processing

## **Registration and Event management:**

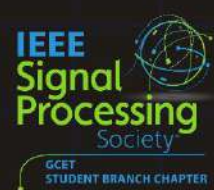
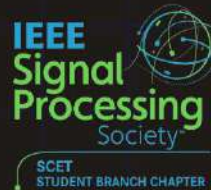
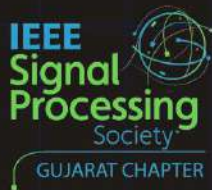
Registration of the event started on 21<sup>st</sup> September, 2022 and we received total 247 participants from different colleges across the globe, many professionals and researchers. Registration, as well as anchoring, was managed by student's office bearers of IEEE SPS SCET SBC and IEEE SCET SB.

Panel Discussion was also incorporated in event was managed by IEEE SPS SBC and IEEE SPS Gujarat Chapter and moderated by Prof. Arpan Desai, SPS Gujarat Section.

The event was very well-managed by Prof. Ketki Pathak, Assistant Professor from Electronics and Communication Department, SCET, Prof. Arpan Desai, Researcher and Prof. Mita Paunwala, Head of Electronics and Communication Department, CKPCET.



# Speakers:



## -:| SPEAKER |:-



### -:| Dr. Uttama Lahiri |:-

"Dr. Uttama Lahiri has received her Master's from IIT Kharagpur and Ph.D. from Vanderbilt University, USA. Currently, she is an associate professor of at Electrical Engineering, IIT Gandhinagar, India. Her research interests include Physiological Signal Processing, Virtual Reality based affective computing and Rehabilitation, Eye Tracking and Physiology based modeling techniques, and Adaptive Intelligent techniques."



### -:| Dr. Celia Shahnaz |:-

Celia Shahnaz, SMIEEE, Fellow IEB, received Ph.D. degree from Concordia University, Canada and is currently a Professor at, Department of EEE, BUET, Bangladesh. She is a recipient of the Canadian Commonwealth Scholarship/Fellowship and Bangladesh Academy of Science Gold Medal for her contribution in Science and Technology. Her research interests include signal processing for speech analysis and speech enhancement, audio-visual recognition for biometric security, control system, robotics, pattern recognition, machine learning and deep learning. She is the recipient of the 2021 IEEE MGA Achievement Award, 2021 Inspiring Women in Academia Award from Bangladesh brand forum, 2019 R10 Humanitarian Activities Outstanding Volunteer Award, 2016 MGA Leadership Award 2015 WIE Inspiring Member Award, 2013 R10 WIE Professional Volunteer Award.



### -:| Dr. Urvashi Joshi |:-

Dr. Urvashi Joshi is at present working as an Assistant Professor in the Department of Computer Science, in Bansanthal Vidhyapith. She received her bachelor's degree in Electronics & Communication Engineering in 2009. She pursued her M.Tech in 2013 in the field of Compressive sensing. She completed her Ph.D. from NIT, Jaipur, and Rajasthan, India on "Clustering Algorithms Based on Social Spider Optimization for Hyperspectral Image Analysis". She has published many articles in reputed journals and conferences. Her research interests revolve to obtain the solution for problems associated with medical signal processing, Hyperspectral Images, Data mining, and Artificial Intelligence.



## -:| SPEAKER |:-

### -:| Dr Lov Kumar |:-



Dr. Lov Kumar is currently working as Assistant professor in the Department of Computer Science and Information Systems, BITS-PILANI, Hyderabad. His current research interests are in the area of Mining Software Repositories, Machine Learning, Text Analysis, Testing of AI Systems, Software Analytics, and Social Media Analytics. His thesis is titled "Predicting Software Quality Parameters using Artificial Intelligence Techniques and Source Code Metrics". He has delivered over 55 invited talks, over 80 international refereed publications in international conferences and journals, and four published book chapters to his credit. He has won several other awards including the best Young Scientist Award, Best Researcher Award, and best paper Award.

### -:| Dr. M.V. Rajesh |:-



Dr. M.V. Rajesh is currently working as Associate Professor Dept. of Electronics Engineering at the College of Engineering Chengannur, Kerala. He is Chairman of IEEE Signal Processing Society-Kerala Section and Chairman, IEEE Kochi Subsection. He completed his graduation from Model Engineering College, Thrikkakara (BTech in Electronics Engineering). He completed his PG in Electrical Instrumentation and control from the National Institute of Technology (NIT), Calicut and Ph.D. in Intelligent Signal Processing from the Cochin University of Science and Technology (CUSAT) in the year of 2011. His area for research interest are Digital Signal processing (DSP), Artificial Neural Networks (ANN), Fuzzy Logic and Nonlinear System Analysis and Modeling.

### -:| Dr. Rohit Thanki |:-



Dr. Rohit Thanki is a computer vision expert and AI researcher with over 8 years of research experience in computer vision, artificial intelligence, medical image analysis & security, and biometrics. Currently working as a Data Scientist, KRIAN GmbH, Germany. He earned his bachelor's in electronics & communication, a master's in communication engineering, and a doctorate in digital image processing and data security. His areas of research interest are medical image analysis, artificial intelligence, machine learning, deep learning, digital watermarking, data security, compressive sensing, and signal processing. He has more than 40 publications to his credit and also contributed more than 20 books with different publishers.



## -:| SPEAKER |:-

### -:| Prof. Shankar Parmar |:-



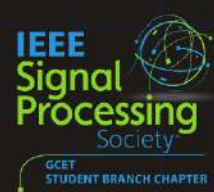
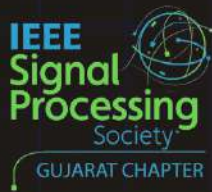
Prof. Shankar Parmar received his M Tech from SVNIT, Surat in 2010. He is presently working as an Assistant Professor at Government Engineering College, Godhra since July 2017. His areas of expertise include biomedical signal processing, healthcare, medical image, and video processing. He has more than 15 years of experience in the teaching profession and 2 years of industry experience at IBM India Pvt Ltd. He has mentored more than ten postgraduate dissertations. He has reviewed papers at prestigious IEEE conferences. In the year 2020, he was given the Innovate to Impact (I2I) award by the Gujarat Technological University Innovation and Startup Center (GISC).

### -:| Dr. Ashwini Deshpande |:-



Dr. Ashwini Deshpande is an Associate Professor, in E&TC Department at Cummins College of Engineering for Women, Pune, Maharashtra. She has published 30+ research papers in refereed National, International journals and conferences and published 2 Indian patents. She completed a funded research project under joint Research Programme by Indian Space Research Organization and Savitribai Phule Pune University (ISRO-SPPU) Space Technology Cell (Year 2018-20). She has also completed 2 industrial consultancy projects in the area of signal processing and video processing. She is working as a reviewer for referred journals of Elsevier, IET and IEEE Transactions. She received an "Outstanding Women Award for Research Project of the Year" from Genesin of Educational Impressions, Roorkee in 2021, and an "Outstanding Women in Engineering (Area- Electronics)" by Venus International Women Awards (VIWA), in March 2020.

## Schedule:



# Seasonal School on Multi-Dimensional **Signal** Processing, Tools & Tech - 2022

## PROGRAM SCHEDULE OCTOBER 11, 2022

Time	Name of Expert	Title of Talk
5:00-6:00 PM	Dr. Uttama Lahiri, IIT Gandhinagar	Fourier Analysis: Understanding the Effects of Discretization, Truncation and Detrending
6:00-7:00 PM	Dr. Lov Kumar, BITS Pilani, Hyderabad Campus, Hyderabad	Ensemble learning with practical implementation using python
7:00-8:00 PM	Dr. Urvashi Joshi, Assistant Professor, Banasthali Vidyapith	Understanding of basic EEG signal for Depression Analysis

# Seasonal School on Multi-Dimensional Signal Processing, Tools & Tech - 2022

## PROGRAM SCHEDULE OCTOBER 12, 2022

Time	Name of Expert	Title of Talk
5:00-6:00 PM	Dr. Celia Shahnaz, Professor, Department of EEE, BUET	Fundamentals of Biomedical Signal Processing
6:00-7:00 PM	Panel Discussion	Benefits and Opportunities with SPS Memberships in career growth for Young Researchers
7:00-8:00 PM	Dr. M.V. Rajesh	Federated Learning: A Signal Processing Perspective



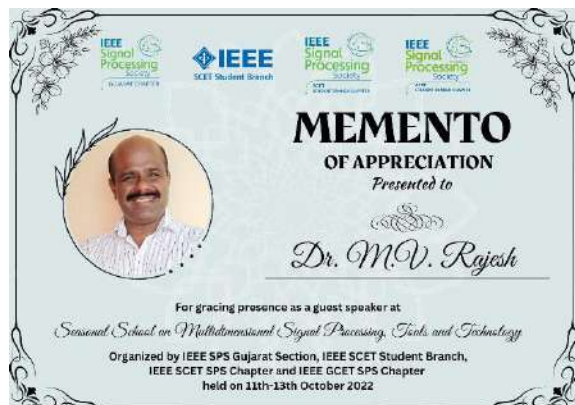
# Seasonal School on Multi-Dimensional **Signal** Processing, Tools & Tech - 2022

## PROGRAM SCHEDULE OCTOBER 13, 2022

Time	Name of Expert	Title of Talk
5:00-6:00 PM	Dr Rohit Thanki, Data Scientist, KRiAN GmbH, Germany	Medical Image Analysis using Artificial Intelligence
6:00-7:00 PM	Prof. Shankar Parmar, GEC - Godhra	Detection of EEG Signal
7:00-8:00 PM	Dr. Ashwini Deshpande, E&TC, MKSSS's Cummins College of Engineering for Women, Pune	Recent tools for Practical Signal Processing and Analysis



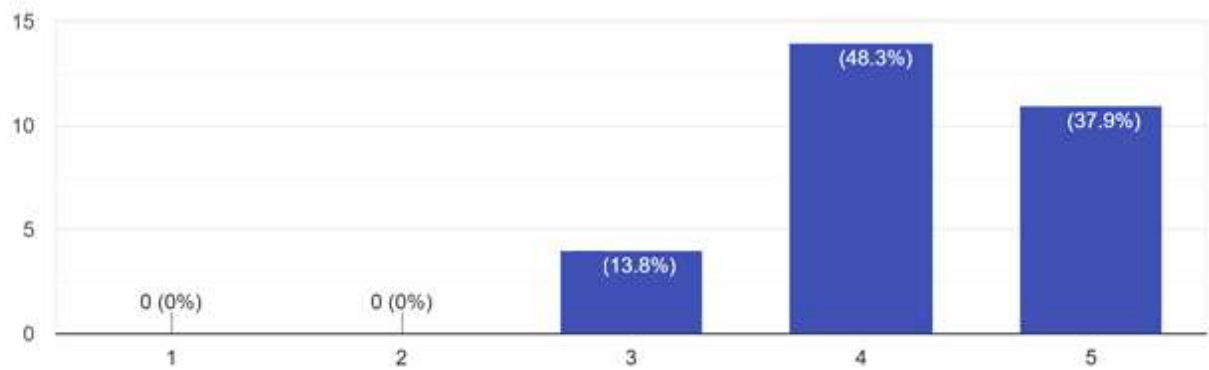
# Gratitude to Speakers:



# Feedback:

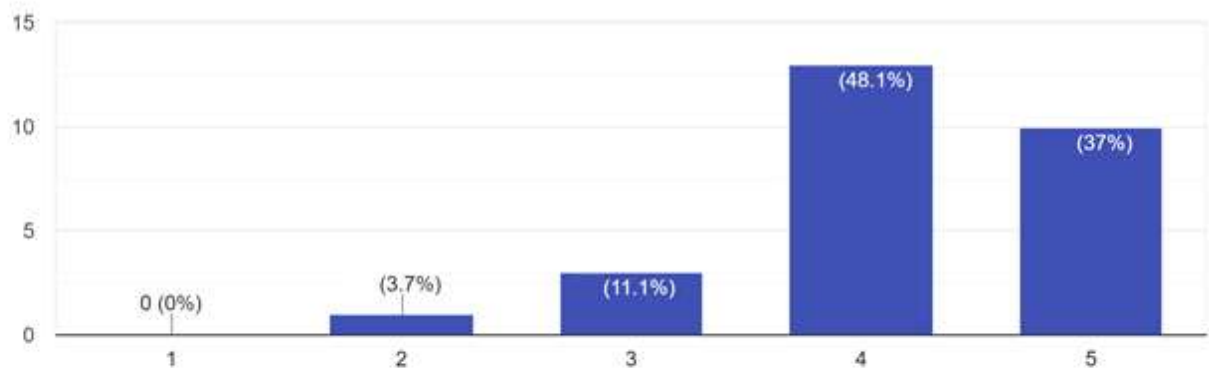
## Day-1 (Session-1)

How do you rate our session on a scale of 1-5?



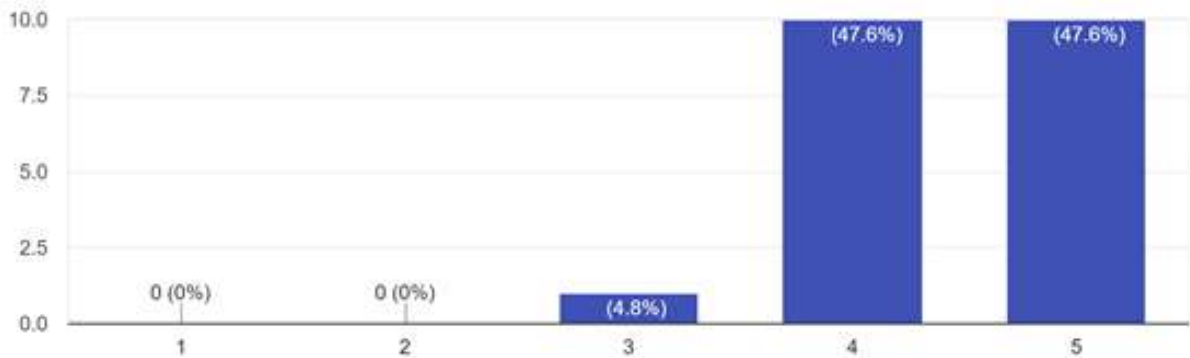
## Day-1 (Session-2)

How do you rate our session on a scale of 1-5?



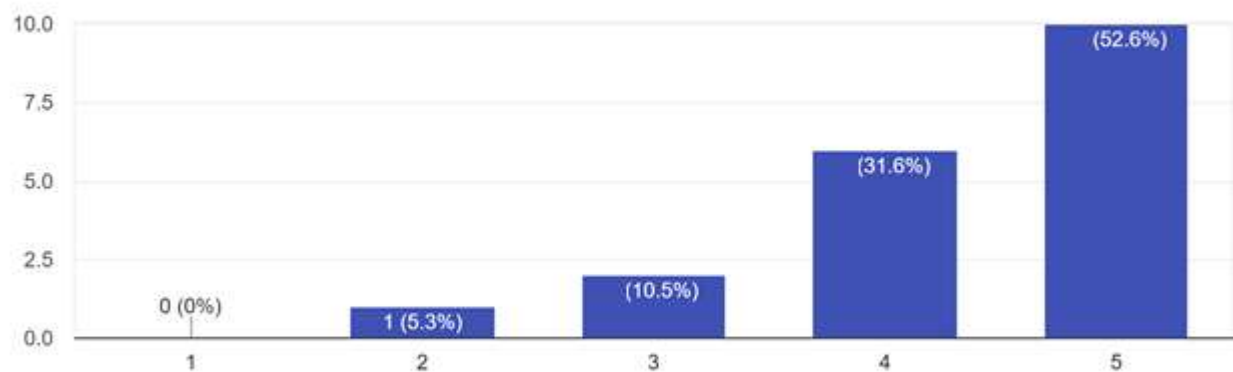
## Day-1 (Session-3)

How do you rate our session on a scale of 1-5?



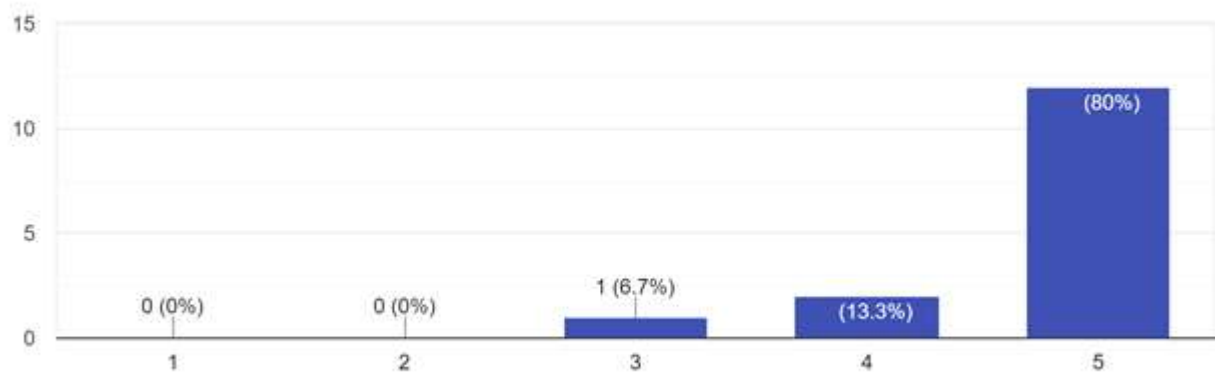
## Day-2 (Session-1)

How do you rate our session on a scale of 1-5?



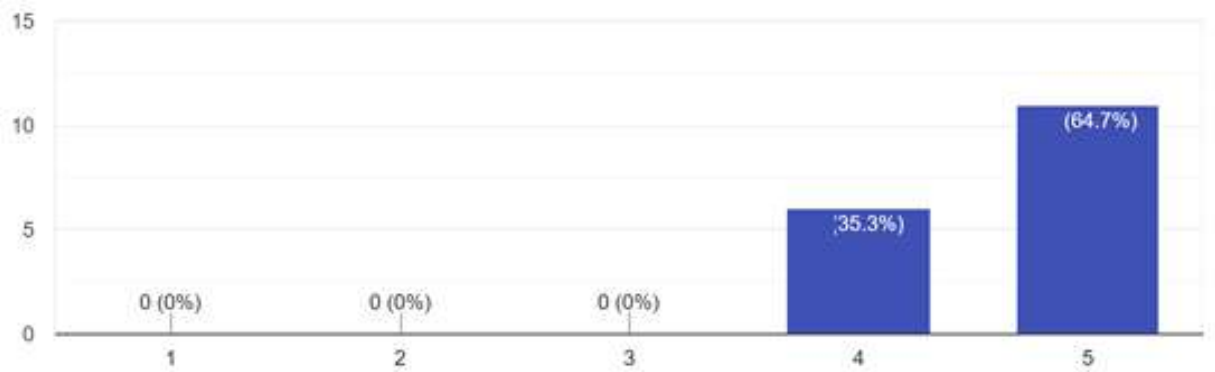
## Day-2 (Session-2)

How do you rate our session on a scale of 1-5?



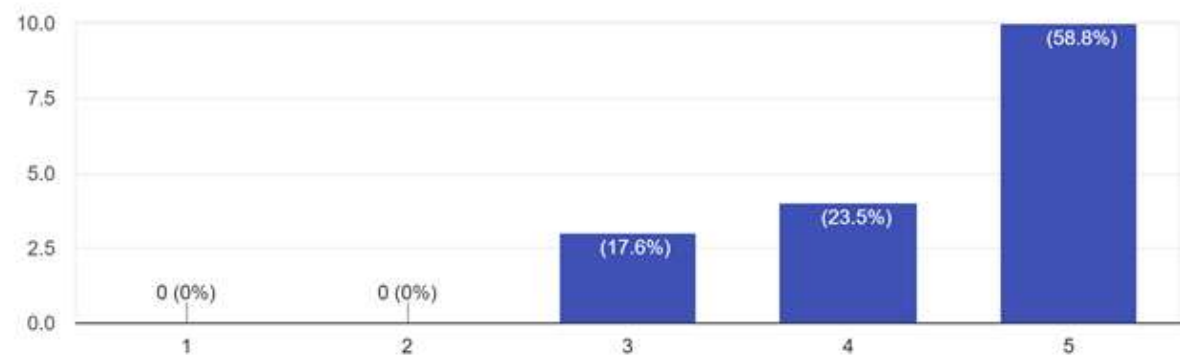
## Day-2 (Session-3)

How do you rate our session on a scale of 1-5?



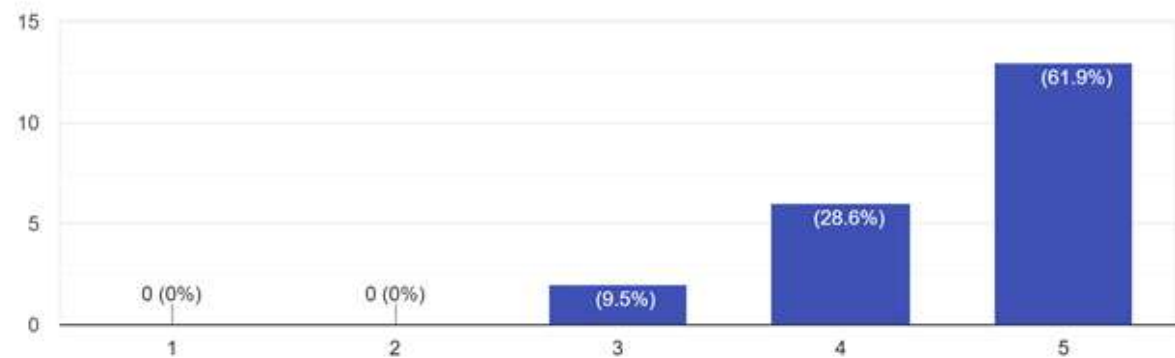
# Day-3 (Session-1)

How do you rate our session on a scale of 1-5?



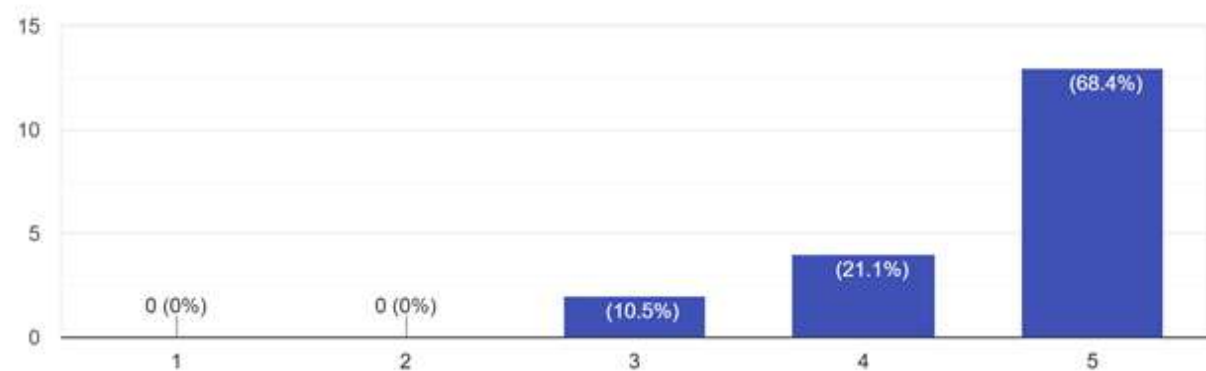
# Day-3 (Session-2)

How do you rate our session on a scale of 1-5?



# Day-3 (Session-3)

How do you rate our session on a scale of 1-5?



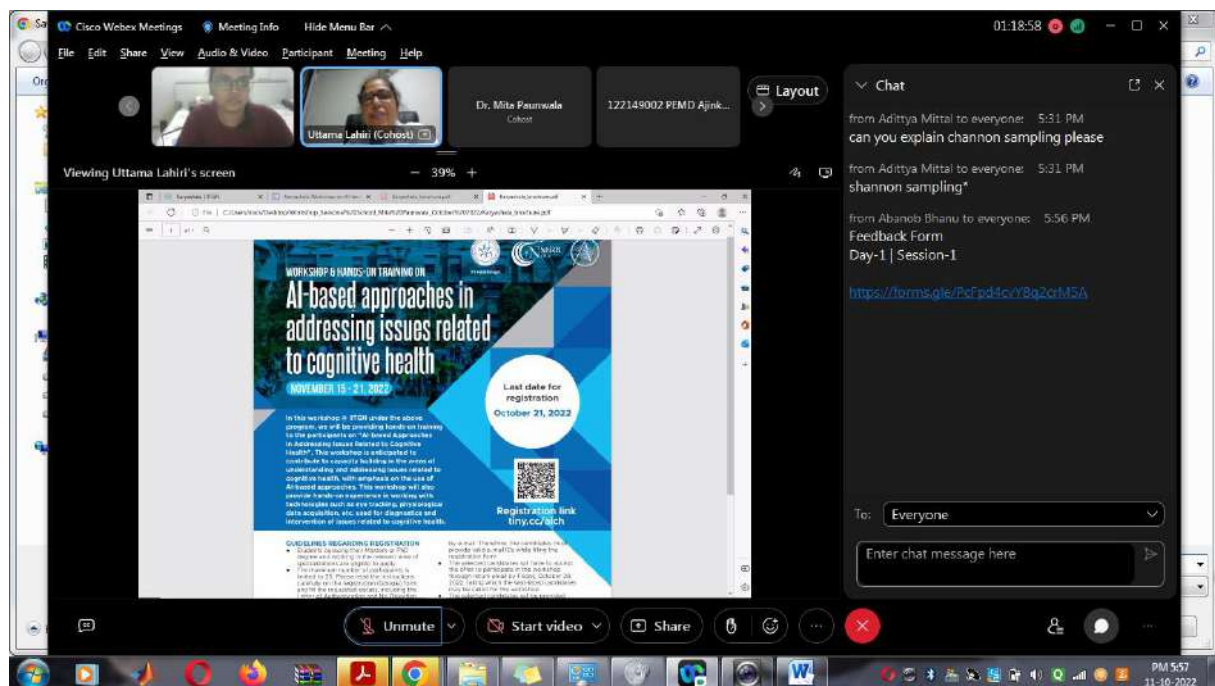


## Quiz Winners:





## Event Glimpse:





Cisco Webex Meetings Meeting Info Hide Menu Bar

File Edit Share View Audio & Video Participant Meeting Help

02:31:36

Layout

Chat

delopam31@gmail.com Close the Chat panel

from Dinesh Kumar to everyone: 7:08 PM  
Is ensemble learning good for regression analysis?

from sairam to everyone: 7:08 PM  
previously we don't have any data how to predict

from Sushila to everyone: 7:09 PM  
please share ppt code and session recording. Really great and informative session. Thank you Lov Sir

from A. Narayan to everyone: 7:09 PM  
How much percentage of data is needed for training?

from Dinesh Kumar to everyone: 7:09 PM  
Thanks

To: Everyone

Enter chat message here

Viewing lov's screen 42%

new\_session.ipynb

```

from sklearn.metrics import (
    f1_score, precision_score, recall_score, accuracy_score
)

def evaluate_model(model, test_data, test_labels):
    y_pred = model.predict(test_data)
    f1 = f1_score(test_labels, y_pred)
    precision = precision_score(test_labels, y_pred)
    recall = recall_score(test_labels, y_pred)
    accuracy = accuracy_score(test_labels, y_pred)
    return f1, precision, recall, accuracy

# Evaluate the model
f1, precision, recall, accuracy = evaluate_model(model, test_data, test_labels)

print(f"F1 Score: {f1}, Precision: {precision}, Recall: {recall}, Accuracy: {accuracy}")

```

Unmute Stop video Share

PM 7:10 11-10-2022

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02:32:04

Layout

Chat

Lov Sir

from A. Narayan to everyone: 7:09 PM  
How much percentage of data is needed for training?

from Dinesh Kumar to everyone: 7:09 PM  
Thanks

from A. Narayan to everyone: 7:10 PM  
Thanks

from Abanob Bhanu to everyone: 7:10 PM  
Feedback Form  
Day-1 | Session-2  
<https://forms.gle/X7Jv3mzzPCP62oH9>

from sairam to everyone: 7:10 PM  
thank you sir

To: Everyone

Enter chat message here

Dr. Mita Paunwala (Cohost)

Unmute Stop video Share

PM 7:10 11-10-2022

Cisco Webex Meetings Meeting Info Hide Menu Bar 02:51:47

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Urvashi Shukla Dr. Mita Pauranwala petel Nayan 122149002 PEMD Ajink... Aanshi Vadora Aanya Lokhandwala Layout

Viewing Urvashi Shukla's application(s)

conference\_papaer\_code.ipynb

```
[ ] 1 import tensorflow as tf #TensorFlow is an end-to-end open source platform for machine learning.
2 import matplotlib.pyplot as plt #Matplotlib is a comprehensive library for creating static, and
3 import numpy as np #NumPy offers comprehensive mathematical functions, random number generators,
4 import importlib
5 #Scikit-learn is a free software machine learning library for the Python programming language.
6 #It features various classification, regression and clustering algorithms including support-vector
7 from sklearn import preprocessing as prep
8 importlib.reload(preprocessing)
9 import warnings
10
```

1 pip install pyEDPlib

Unmute (Ctrl + M), or press and hold the Spacebar to temporarily unmute

Unmute Start video Share

Slide 1 PM 7:30 11-10-2022

Inbox (23,959) - ketlic.joshi@ceel Meet - iec-xapb-ahm

meet.google.com/iec-xapb-ahm

Celia Shahbaz is presenting

IEEE WIE Magazine

IEEE WIE EXCHANGE

Ajinkya B ABANOB BHANU

Diwanshi Dugar Alpesh Jasani

Aanshi Vadora Celia Shahbaz

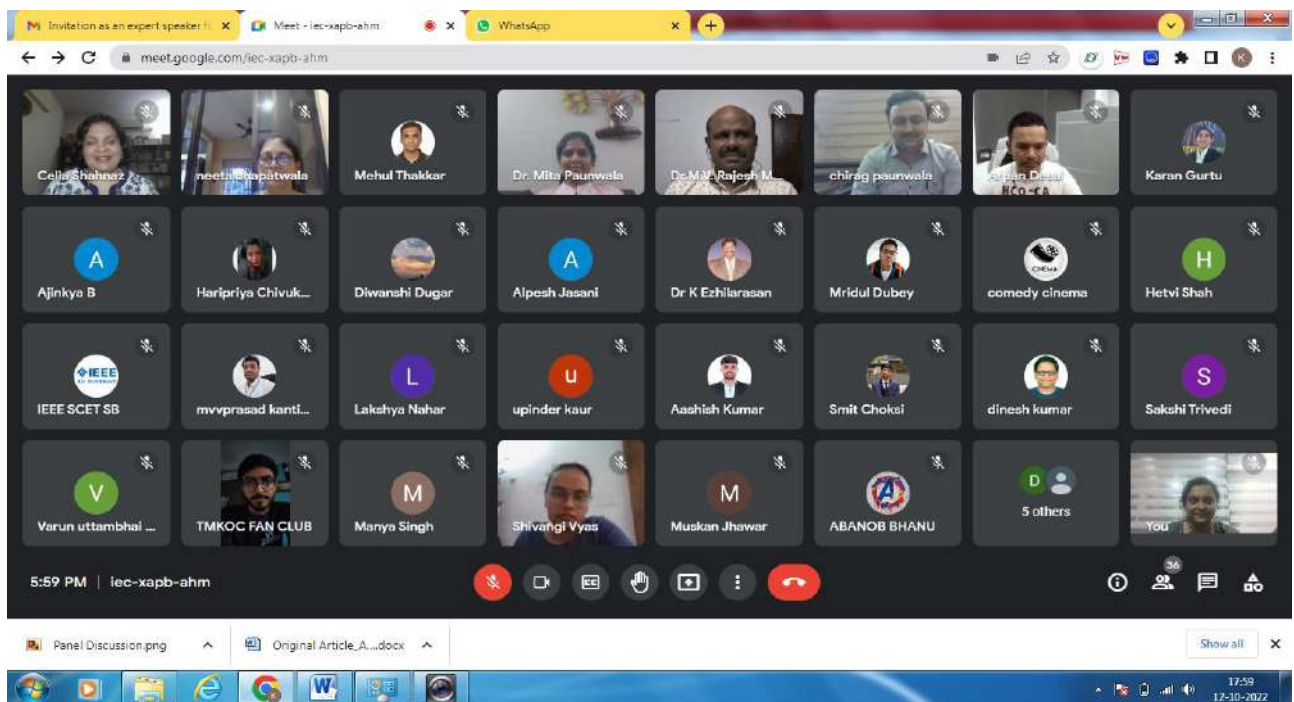
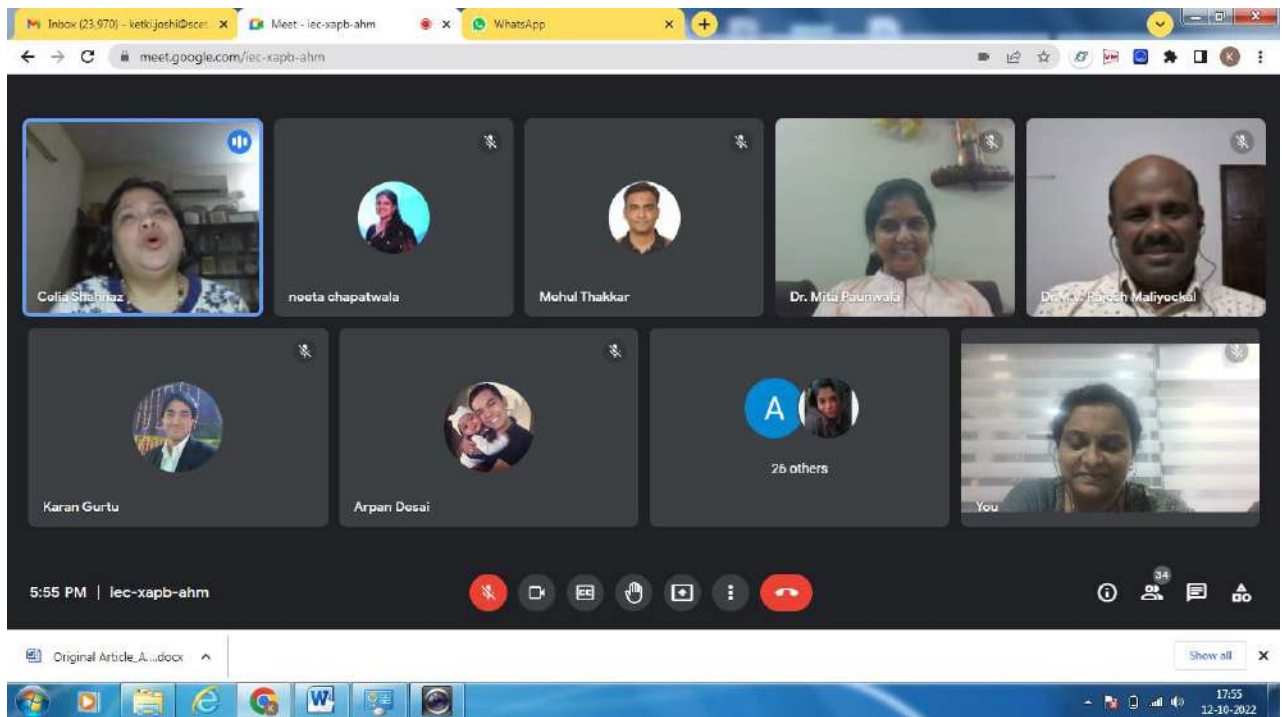
PRIYANKA DARBARI joined

Show everyone

5:18 PM | iec-xapb-ahm

17:38 12-10-2022





**Report Compiled by:** Abanob Bhanu, Chair, IEEE SCET SB and Muskan Jhawar, Secretary, IEEE SCET SB