



RESEARCH ASSOCIATION OF MASTERS OF ENGINEERING

Ambegaon (kh), Pune-411046, Maharashtra, India

Tel. : +91-8459461107, +91-9960863684

Email : conference@rame.org.in

Website: https://www.rame.org.in/reserch_association.html

Ref. No.: RAME/conference/04

Date: 12/12/2022

International Conference on Robotics, Automation and Intelligent Computing

ICRAIC 2K22

(A Virtual Conference)

3-4 December 2022

BRIEF CLOSURE REPORT

Research Association of Masters of Engineering is committed to providing a peer reviewed platform to outstanding researchers to exhibit their findings for the furtherance of technology to provide a research forum. We are devoted to continual innovation to better support the wishes of our communities, making sure the integrity of the research we publish, and championing the importance of open research.

ICRAIC 2K22 was a two days' event organized by Research Association of Masters of Engineering on dated 3-4 December 2022 with the aims to showcase state-of-the-art methodologies and technologies in Robotics, Automation and Intelligent Computing. It focuses on new ideas and paves the way to disseminate the latest innovations and practices. It facilitates opportunities to network, collaborates, and exchange ideas with renowned leaders, scientists, and researchers in Engineering and Science. It acts as a crucial platform for industry and academia to foster innovative ideas, theories, frameworks, and applications. Hope ICRAIC 2K22 have encouraged recent and futuristic advancements, challenges, and new strategies in the frontiers of Engineering and Science.

Prof. Dr. Saratha Sathasivam, Associate Professor in the School of Mathematical Sciences at Universiti Sains Malaysia was the Chief Guest of the conference and delivered inaugural address. Also, Prof. Dr. Saratha Sathasivam was the Keynote Speaker of the conference and delivered a key-note address on title "Lyapunov Energy Minimization Scheme Using Mean Field Theory: New Pradigm in Neuro Symbolic Integration". Several students/research scholar and academicians have presented their research work at ICRAIC 2K22 under the track of Automation and Intelligent Computing. We believe that the knowledge exchanged at ICRAIC



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2K22 immensely helps to the researchers working on relevant fields and contributes to the growth of science and technology.

After the wise effect COVID-19 spreads worldwide, taking into account the various circumstances of the participant, ICRAIC was adopted all available social media methods, such as online presentation besides the regular presentation styles (oral & poster). The online presentation session was arranged via. ZOOM platform. All authors were participated via in-person presentation at the time of their session on the online platform. Our sincere thanks to the keynote speakers, reviewers, technical and advisory committee members, organizing committee, and all authors for their contribution and making ICRAIC 2K22 a grand success.

ORGANIZING BODY

| | | |
|---|------------------|---|
| 1 | Conference Chair | Dr. Manoj A. Kumbhalkar President, Research Association of Masters of Engineering |
| 2 | Convener | Dr. Jagdish D. Kene Member, Research Association of Masters of Engineering |
| 3 | Convener | Dr. Radheshyam H. Gajghat Member, Research Association of Masters of Engineering |
| 4 | Convener | Dr. K. S. Rambhad Member, Research Association of Masters of Engineering |
| 5 | Co-convener | Mr. Vivekanand Thakare Member, Research Association of Masters of Engineering |
| 6 | Anchor | Ms. Divya Devgirkar |

EXTERNAL GUEST

The conference has been started on 3rd December 2022 at 10.00 am with the inaugural ceremony and continued with keynote session. Thereafter the technical sessions have been carried out online and at the end day i.e., on 4th December 2022 the valedictory session has been carried out at 3.00 pm. The National and International guests from various institute of reputes are invited for ICRAIC 2K22 in different sessions.



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| | | |
|---|------------------------------------|--|
| 1 | Chief Guest for Inaugural Ceremony | Prof. Dr. Saratha Sathasivam Associate Professor, Universiti Sains Malaysia |
| 2 | Keynote Speaker | Prof. Dr. Saratha Sathasivam Associate Professor, Universiti Sains Malaysia |
| 3 | Session Chair | Dr Vishal Satpute Associate Professor, Electronics and Communication Engineering, Visvesvaraya National Institute of Technology, Nagpur, India |

PAPER STATISTICS

Total No. of Papers Received – 49

Total No. of Papers Accepted – 22

Total No. of Papers Rejected – 27

Rate of Acceptance – 45%.

ICRAIC 2K22 BEST PAPER AWARD

Based on the evaluation of presentation by session chair and quality of paper following papers are selected and announced as Best Paper Award in valedictory session.

| Paper Id | Authors | Title | Track |
|----------|---|--|--------------------------------------|
| 23 | Valentin Yunusov, Fail Gafarov and Pavel Ustin | Shapley values to explain machine learning models of school student's academic performance during COVID-19 | Automation and Intelligent Computing |
| 30 | Mahesh Mali, Vijayalakshmi M and Dharendra Mishra | Benchmarking for Proposed MFRISE (Multifaceted Recommender Improvement System Engine) | Automation and Intelligent Computing |



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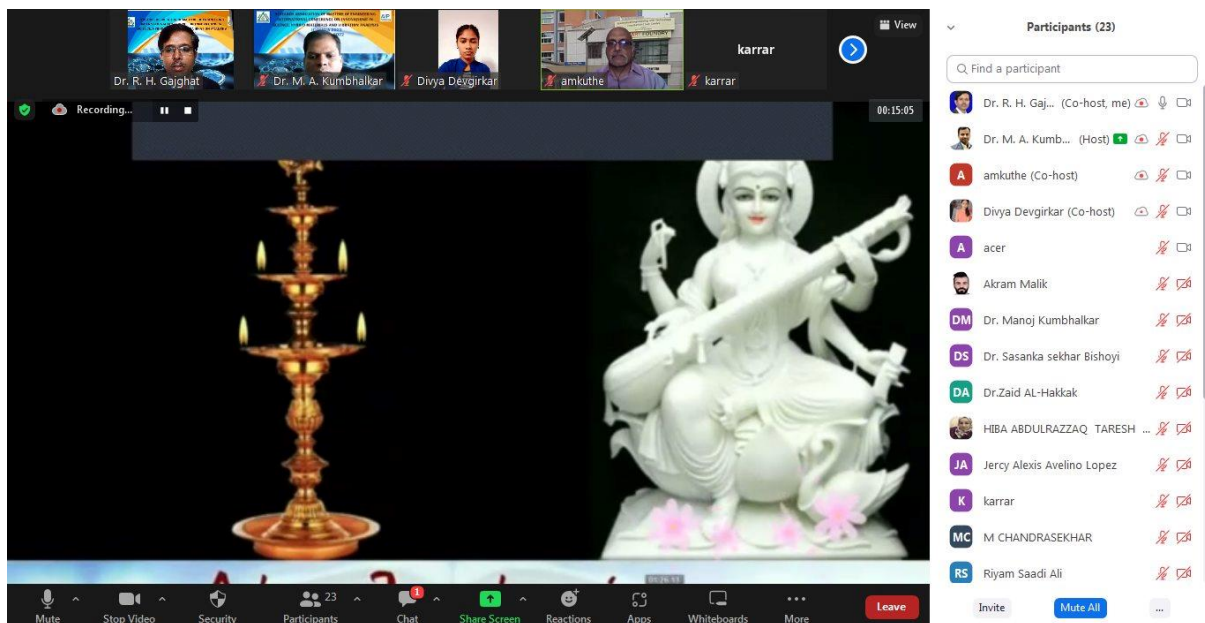
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GLIMPSES OF ICRAIC 2K22 (ONLINE CONFERENCE)



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1. LAMP- LIGHTENING ceremony along with Saraswati Vandana as a tribute to Mother Saraswati, Goddess of Knowledge. An Indian Tradition.

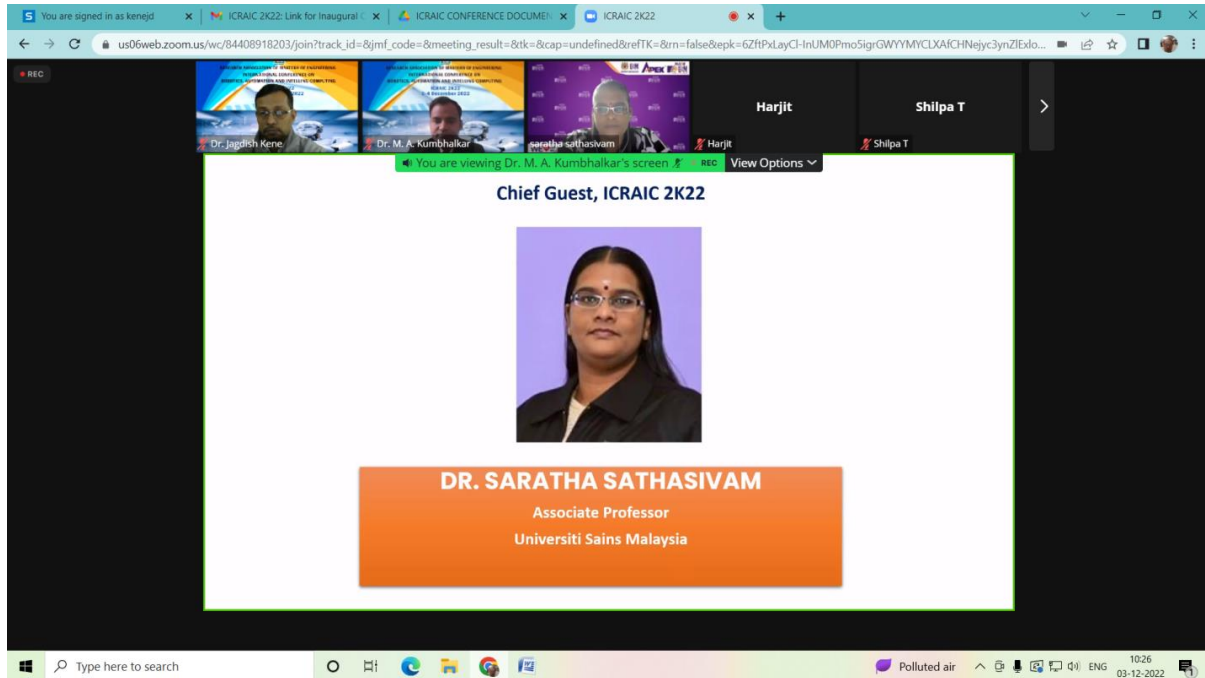




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2. Chief Guest of Inaugural Ceremony Prof. Dr. Saratha Sathasivam addressing the participants.



3. Keynote speaker Prof. Dr. Saratha Sathasivam delivering their talk to the participant of ICRAIC 2K22.





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Zoom Meeting

Recording...

Flip Ferro

High energy magnetic field
or

Boltzman machine

24°C Haze

ENG IN

10:27 AM 03-12-2022

Dr. Jagdish Kene
Dr. M. A. Kumbhakar
saratha sathasivam
Divya Devgikar
Shilpa T
Harjit

Zoom Meeting

Recording...

NEURAL NETWORKS

- Information processing paradigm that is inspired by the way biological nervous system process information.
- Have a large number of highly interconnected processing elements that usually operates in parallel.

24°C Haze

ENG IN

10:29 AM 03-12-2022

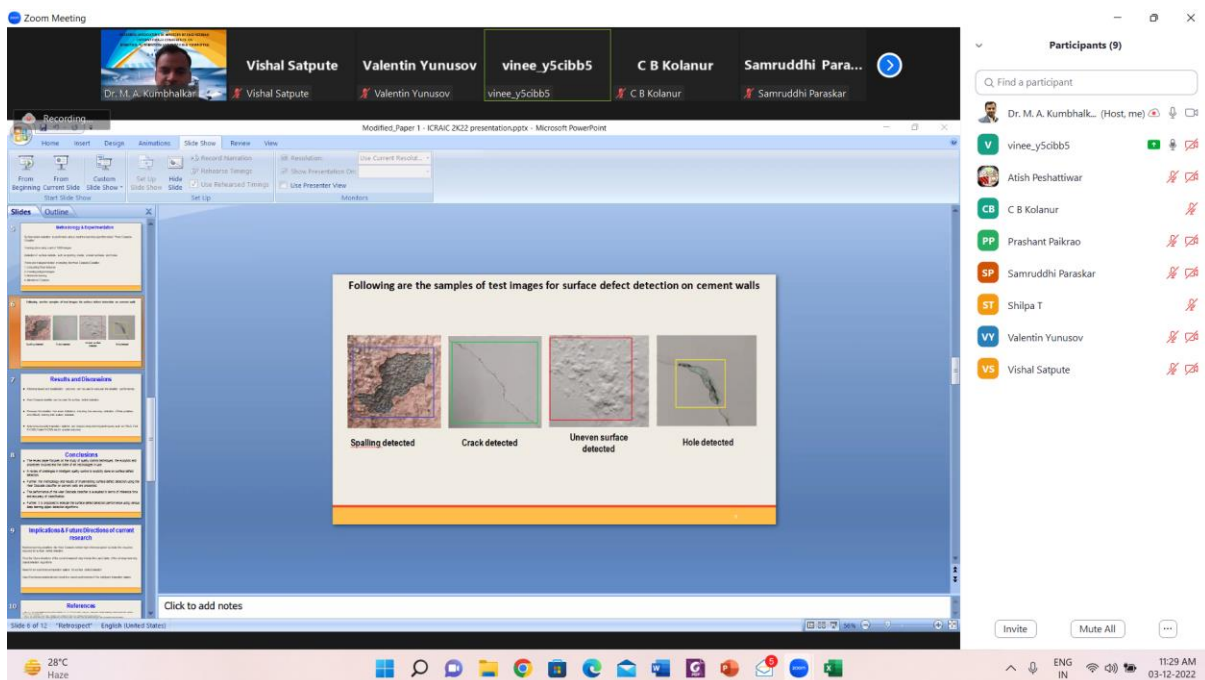
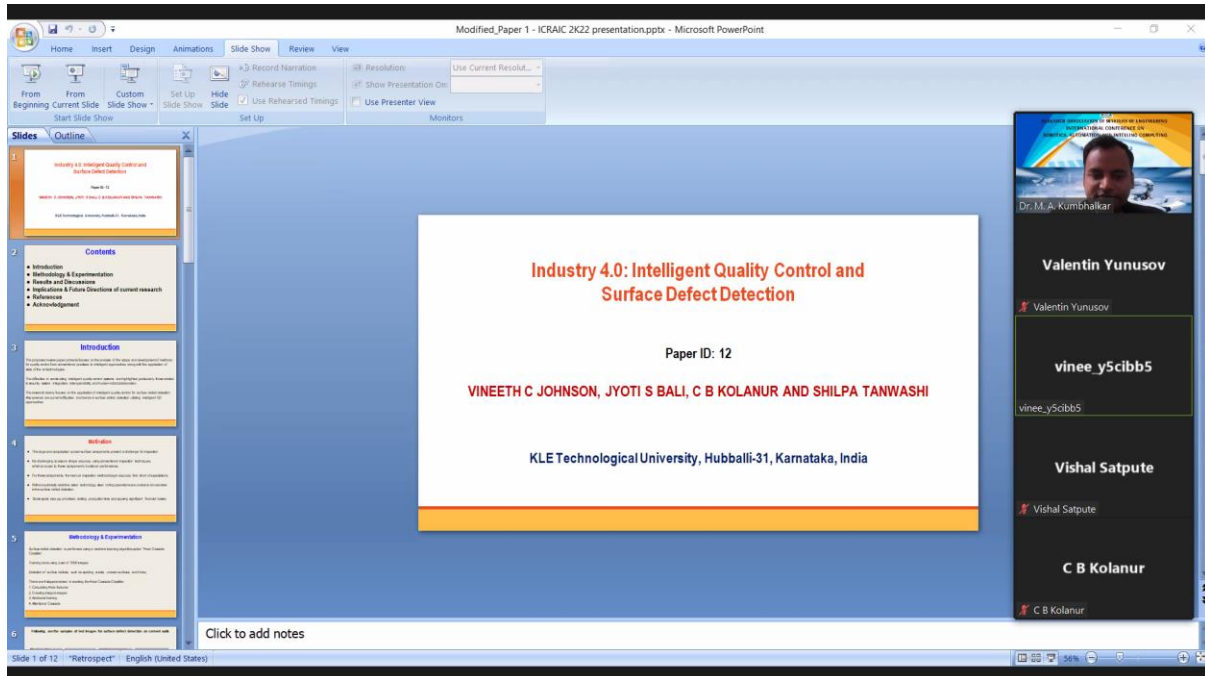
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4. Some glimpses of the technical sessions. Authors have presented their papers in the technical sessions.





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Zoom Meeting

Recording...

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 3 – 4 Dec 2022

Study of Different Coding Methods of Polar code in 5G Communication system

ICRAIC_2K22_paper_21

Mr. A. A. Peshattiwar
Dr. A. S. Khobragade

Research Scholar, Yeshwantrao Chavan College of Engineering, Nagpur, Maharashtra, India

Organized by Research Association of Masters of Engineering, Pune, Maharashtra, INDIA

28°C Haze

Participants (9)

- Dr. M. A. Kumbhalkar (Host, me)
- Atish Peshattiwar
- C B Kolanur
- Prashant Paikrao
- Prof Dr Mahesh Mali
- Samruddhi Paraskar
- Valentin Yunusov
- vinee_y5cibb5
- Vishal Satpute

11:38 AM 03-12-2022

Zoom Meeting

Recording...

Experimental data

School marks for grades for February–March and April–May 2020

Studied features

- Teachers' age, gender and educational category
- Mean mark for February and March 2020
- School characteristics
- School subjects

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28°C Haze

Participants (8)

- Dr. M. A. Kumbhalkar (Host, me)
- Valentin Yunusov
- Prashant Paikrao
- Radhika Deshpande
- Samruddhi Paraskar
- Vishal Satpute
- Yash Lalwani
- Prasheel N Thakre

11:53 AM 03-12-2022



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Zoom Meeting

Recording...

Machine learning methods implementation

For 8th and 10th grade values of MSE are increased significantly for all of the methods, and hence the Cohen's effect size values are more difficult to predict, while for 4th and 9th these values are decreased.

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28°C Haze

Participants (8)

Dr. M. A. Kumbhalkar... (Host, me)

VY Valentin Yunusov

PP Prashant Paikrao

RD Radhika Deshpande

SP Samruddhi Paraskar

VS Vishal Satpute

YL Yash Lalwani

Prasheel N Thakre

11:54 AM 03-12-2022

Zoom Meeting

Recording...

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ICRAIC 2K22
 3 - 4 Dec 2022

Near-lossless Compression Scheme using Hamming Codes for Non-textual Important Regions in Document Images

ICRAIC_2K22_paper_24

Prashant Paikrao, Dr. D D Doye, Dr. M V Bhalerao, Dr. M V Vaidya

Shri Guru Gobind Singhji Institute of Engineering and Technology, Nanded

Organized by Research Association of Masters of Engineering, Pune, Maharashtra, INDIA

29°C Haze

Participants (9)

Dr. M. A. Kumbhalkar... (Host, me)

PP Prashant Paikrao

RD Radhika Deshpande

RD Radhika Deshpande

SP Samruddhi Paraskar

VY Valentin Yunusov

VS Vishal Satpute

YL Yash Lalwani

Prasheel N Thakre

12:04 PM 03-12-2022

Zoom Meeting

Recording...

NOMA SYSTEM MODEL

In a two-user downlink NOMA system, suppose User 1 is a faraway user and User 2 is a close user with a good signal.

The BS serves both users on the same frequency spectrum but $|h_1| < |h_2|$ and therefore $\alpha_1 > \alpha_2$

The signal transmitted by the base station can be given as:

$$x = \sqrt{P}(\sqrt{\alpha_1}x_1 + \sqrt{\alpha_2}x_2)$$

At the User 1, the received vector is expressed as:

$$y_1 = h_1\sqrt{P}\sqrt{\alpha_1}x_1 + h_2\sqrt{P}\sqrt{\alpha_2}x_2 + w_1$$

Direct decoding is performed to estimate x_1

$$SNR = \gamma_1 = \frac{\alpha_1 P |h_1|^2}{\alpha_2 P |h_1|^2 + \sigma^2}$$

Achievable rate (bps/Hz) of the User 1

$$R_1 = \log_2 \left(1 + \frac{\alpha_1 P |h_1|^2}{\alpha_2 P |h_1|^2 + \sigma^2} \right)$$

29°C Haze

12:39 PM 03-12-2022

Zoom Meeting

You are viewing Radhika Deshpande's screen

Recording...

RESULT

Figure 1: BER Vs Transmitted Power graph for Rayleigh Channel

Figure 2: BER Vs Transmitted Power graph for Nakagami Channel

Unmute Stop Video Security Participants Chat Share Screen Pause/Stop Recording Reactions Apps Whiteboards

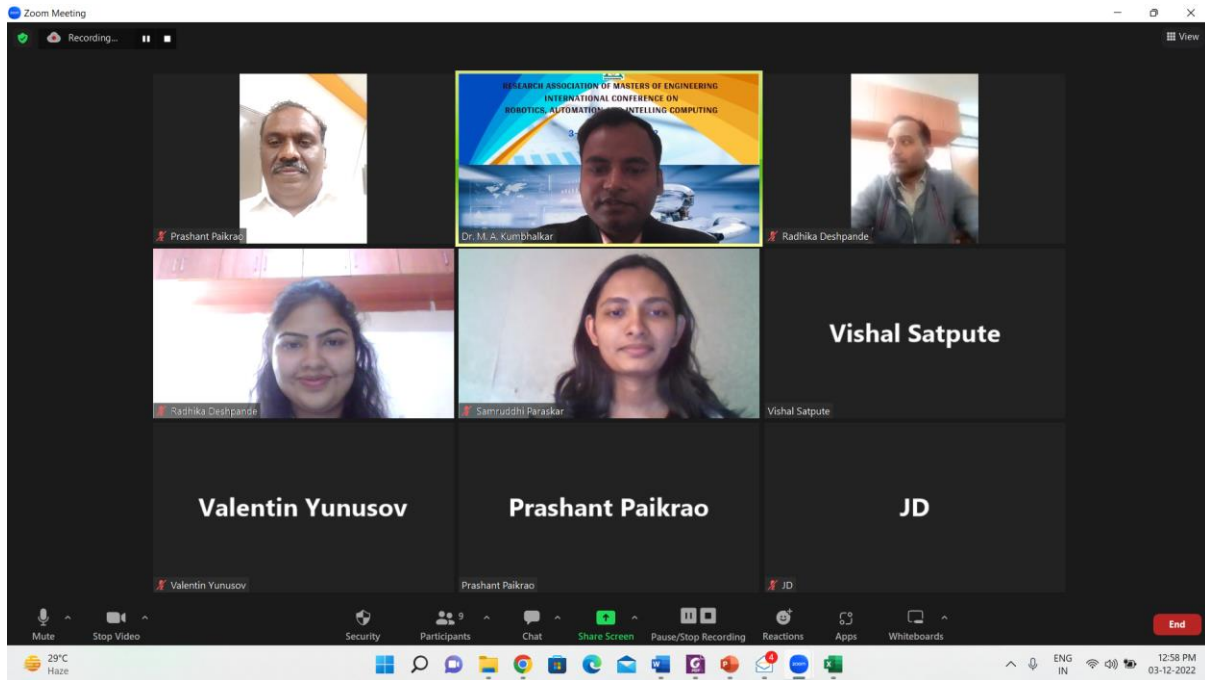
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Dr. M. A. Kumbhalkar (Host, me)

Prashant Paikrao

Jagdish Kene (Co-host)

Chanchal Khergade

Coral

Harjit Singh

Piyush Deoraao Pillare

Pooja Jajoo

Pooja Jajoo

Prajakta

Prof Dr Mahesh Mali

Raut Ankur

Shubham Agrawal

Yash Ingolikar

International Conference on
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ICRAIC 2K22
3 – 4 Dec 2022

Verification of Role of Data Vectorization Direction in Image Compression using Fuzzy Composition Operation

ICRAIC_2K22_paper_25

Prashant Paikrao, Dr. D D Doye, Dr. M V Bhalerao, Dr. M V Vaidya

Shri Guru Gobind Singhji Institute of Engineering and Technology, Nanded

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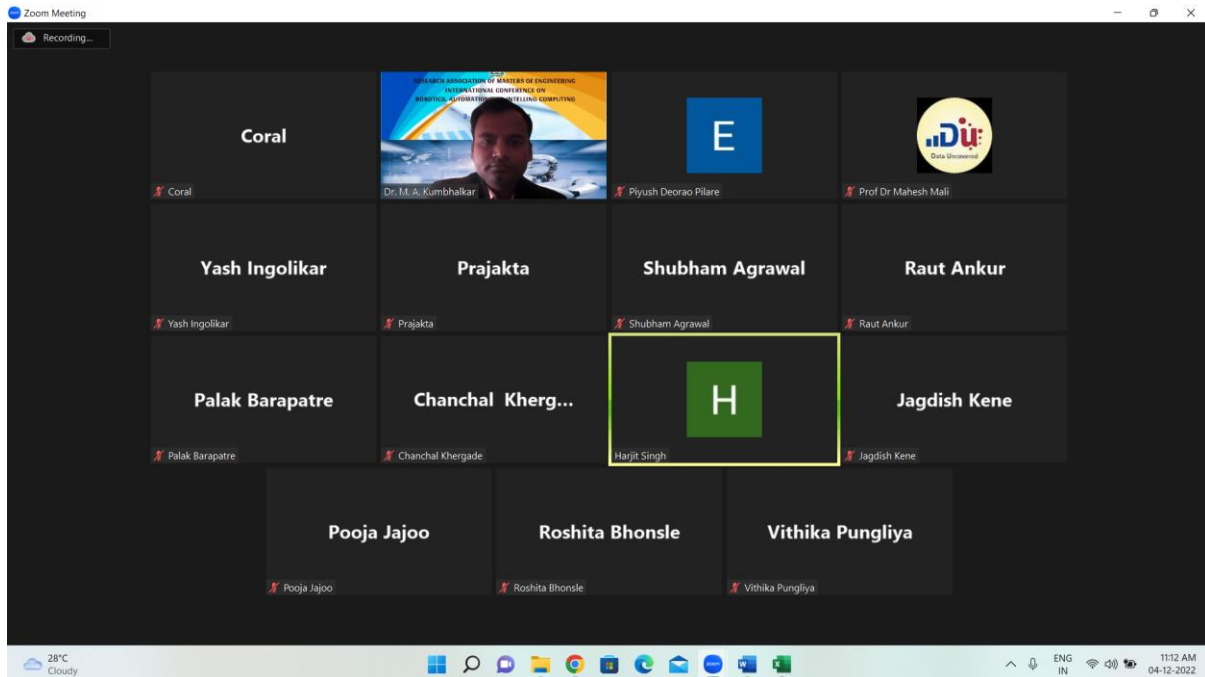
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11:06 AM 04-12-2022



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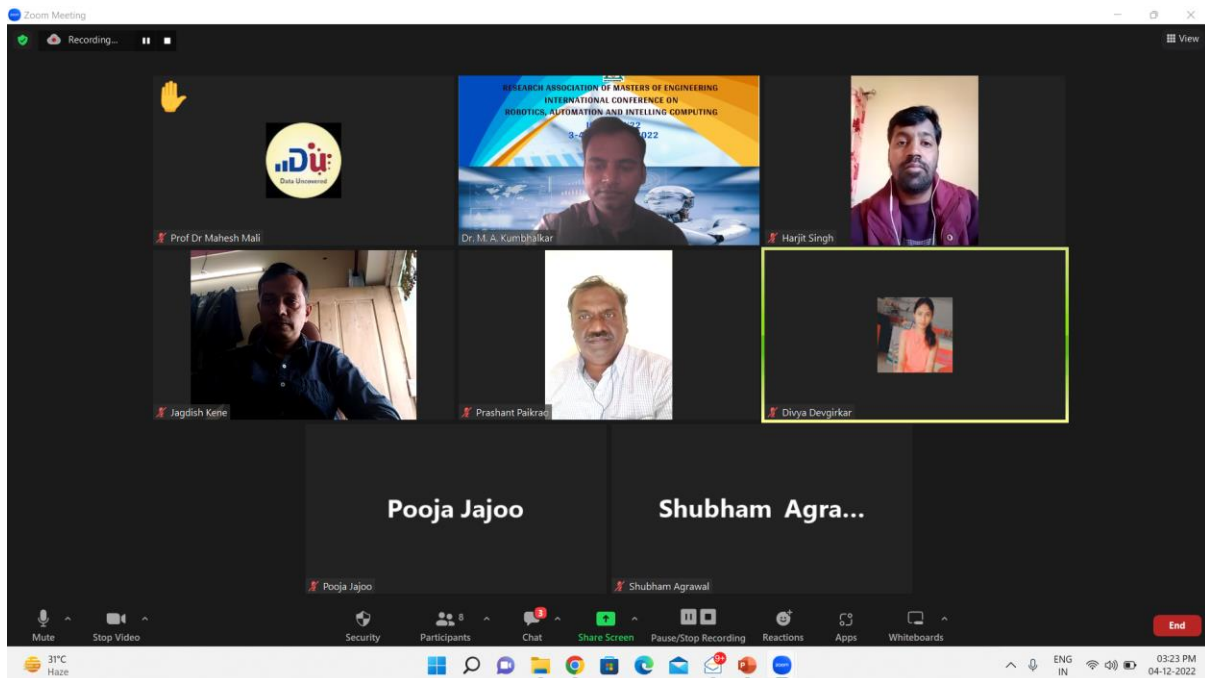
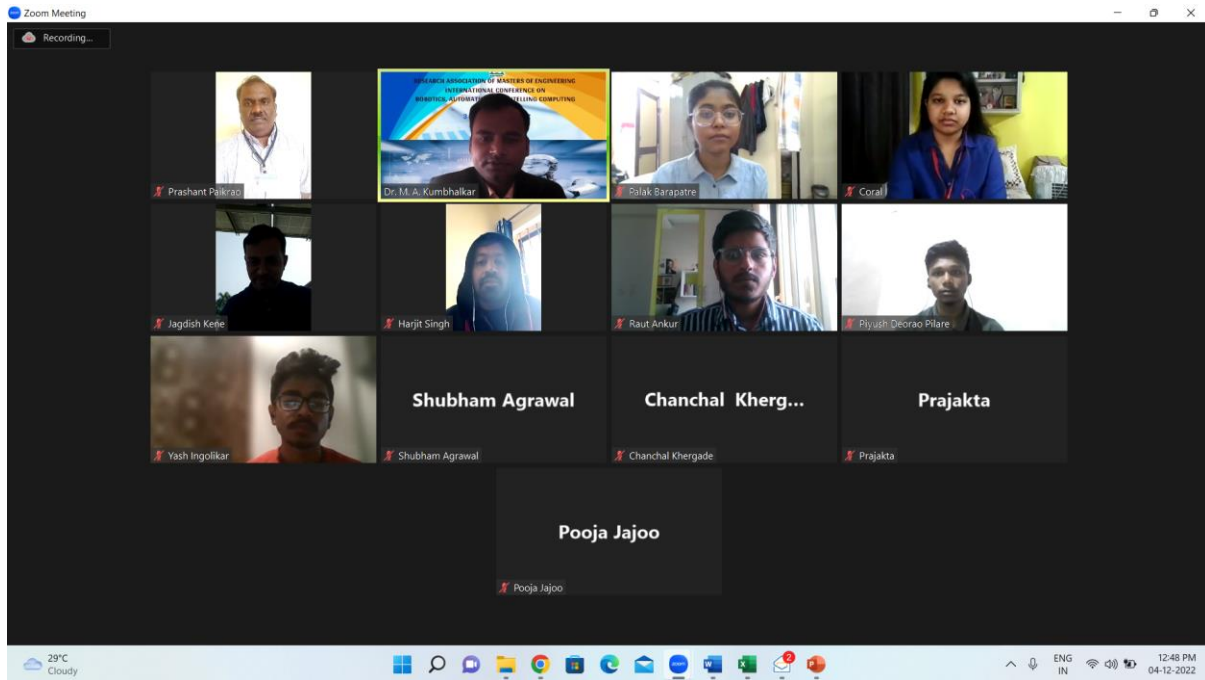
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All details of the conference are available on <https://conference.rame.org.in/ICRAIC/>

Contact person for queries:

Dr. M. A. Kumbhalkar,

Conference Chair, ICRAIC 2K22.

President, Research Association of Masters of Engineering, India.

manoj.kumbhalkar@rame.org.in

Date: 12/12/2022

Place: Pune, India

Dr. K. S. Rambhad
Convener
ICRAIC 2K22

Dr. J. D. Kene
Convener
ICRAIC 2K22

Dr. R. H. Gajghat
Convener
ICRAIC 2K22

Dr. M. A. Kumbhalkar
Conference Chair
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