Event Report

of

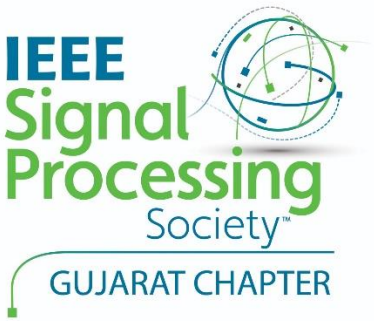
An International e-Conference on Intelligent Systems and Signal Processing (e-ISSP 2020)

28-30 December, 2020

Organized by:

Department of Electronics & Communication Engineering
G. H. Patel College of Engineering & Technology
Bakrol Road, Vallabh Vidyanagar-388120, Gujarat, India
(A Constituent College of CVM University)

Technically Supported by:
SPS Chapter, IEEE Gujarat Section



The International e-Conference on Intelligent Systems and Signal Processing (e-ISSP 2020) aims to spread awareness in the research and academic community regarding the cutting-edge technological advancements revolutionizing the world. The emphasis of this conference is on dissemination of information, experience and research results on the current topics of interest through in-depth discussions and participation of researchers from all over world. The objective is to provide a platform to the scientists, research scholars and industrialist to interact and exchange of ideas in a number of research areas. This will facilitate communication among researchers in different fields of Electronics & Communication Engineering and Information Technology.

e-ISSP2020 has received an overwhelming response of about 140 research papers including 38 papers from foreign authors. Out of the received papers, 68 papers have been accepted (including 19 foreign papers) which makes an acceptance rate of just under 50%. All the accepted papers, presented during the conference, will be published by Springer's Advanced in Intelligent Systems and Computing (AISC) in form of a proceedings. The conference is an amalgamation of four keynote speeches, pre-conference workshops/ tutorials and poster session in addition to the regular paper presentation. All the registered participants in the conference will be entitled to attend all the sessions of the conference.

e-ISSP 2020 at a Glance

No. of Papers Submitted: 140

International: 38

National: 50

State: 42

No. of Papers Accepted: 68

International: 19

National: 25

State: 25

Acceptance Rate: 49.28%

Publication Partner: Springer (Advances in Intelligent Systems and Computing book series)

Technical Support: SPS Chapter, IEEE Gujarat Section

Following Pre-conference workshops were organized on 28th December, 2020.

1. IoT and it's applications by UST Global Inc.
2. An era of AUTOMOTIVE ELECTRONICS by TCS - Engineering and Industrial Services – Automotive

Both the workshops were attended by 100+ participants comprising od both registered authors/ participants of the conference as well as UG/ PG students.

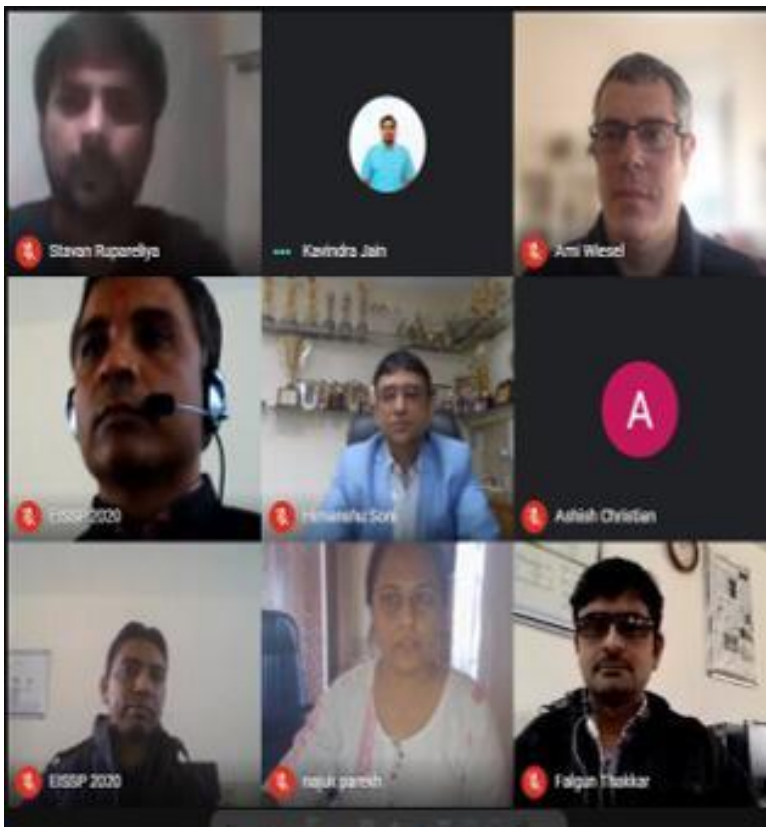
Conference Schedule

29TH -30TH DECEMBER 2020	International e-Conference on Intelligent Signals and Signal Processing (e-ISSP 2020)
TECHNICAL SUPPORT	SPS CHAPTER, IEEE GUJARAT SECTION

ACCEPTED PAPERS, PRESENTED AT THE CONFERENCE, WILL BE PUBLISHED IN THE SPRINGER'S ADVANCES IN INTELLIGENT SYSTEMS AND COMPUTING (AISC) SERIES IN FORM OF THE PROCEEDINGS.

	TIME	PROGRAM SCHEDULE		
DAY 1 (29/12/2020)	10:30 AM	INAUGRAL		
	11:30 AM To 12:30 PM	KEYNOTE SESSION 1	Dr. Ami Wiesel The Rachel and Selim Benin School of Computer Science and Engg, Hebrew University of Jerusalem	TOPIC Three examples of "easy" Non - Convex Optimizations
	2:30 PM TO 3:30 PM	KEYNOTE SESSION 2	Dr. Latif Ladid R & D Specialist, Faculty of Science, Technology & Medicine, University of Luxembourg	TOPIC IPv6-based Internet empowering Super IoT, 5G, SRv6, Blockchain and Cloud Computing
	4:00 PM TO 6:00 PM	TRACK 1	Signal Processing Communication PAPER IDs: - (21,27,32,33,42,43,45,47,63,66,67,70,76,80,81)	
		TRACK 2	Applied Electronics and Emerging Technologies PAPER IDs: - (40,55,62,75,85,86,88,99,107,109)	
		TRACK 3	Computer Vision and AI PAPER IDs: - (3,10,16,23,36,39,46,49,53)	
		TRACK 4	Big Data IOT and Cloud Computing PAPER IDs: - (25,26,30,56,59)	
		TRACK 5,6	Industrial Automation and Robotics & Interdisciplinary PAPER IDs: - (7,11,73,104,134,135)	
DAY 2 (30/12/2020)	10:00 AM TO 11:00 AM	KEYNOTE SESSION 3	Dr. Rangaraj Rangayyan Professor Emeritus of Electrical and Computer Engineering, University of Calgary	TOPIC Computer-aided Diagnosis: Engineering Improved Health Care
	11:00 AM TO 01:00 PM	TRACK 1	Signal Processing Communication PAPER IDs: - (82,89,93,94,100,106,114,124,126,127,128,129,136)	
		TRACK 3	Computer Vision and AI PAPER IDs: - (58,77,79,83,90,98,101,105,111,116)	
	2:30 PM TO 3:30 PM	KEYNOTE SESSION 4	Dr. Ram Bilas Pachori Professor, Department of Electrical Engineering, Indian Institute of Technology Indore	TOPIC Fourier- Bessel Series Expansion-Based Empirical Wavelet Transform for Signal Processing
	4:00 PM	VALEDICTORY		

The e-ISSP 2020 commenced with an inaugural function on 29/12/2020 between 10.30 am to 11.15 am in the online presence of Prof. Ami Wiesel of Hebrew University of Jerusalem, Israel... Here are its glimpses..

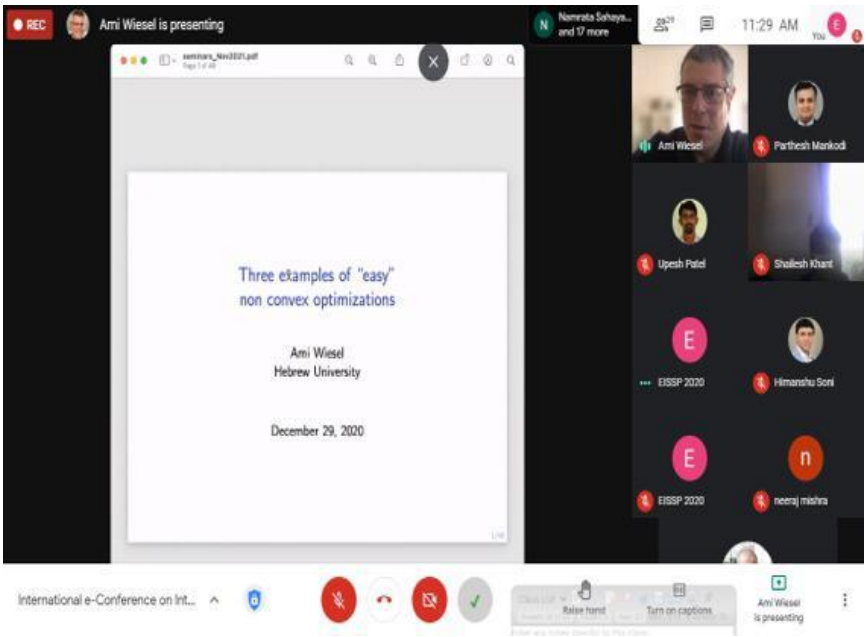


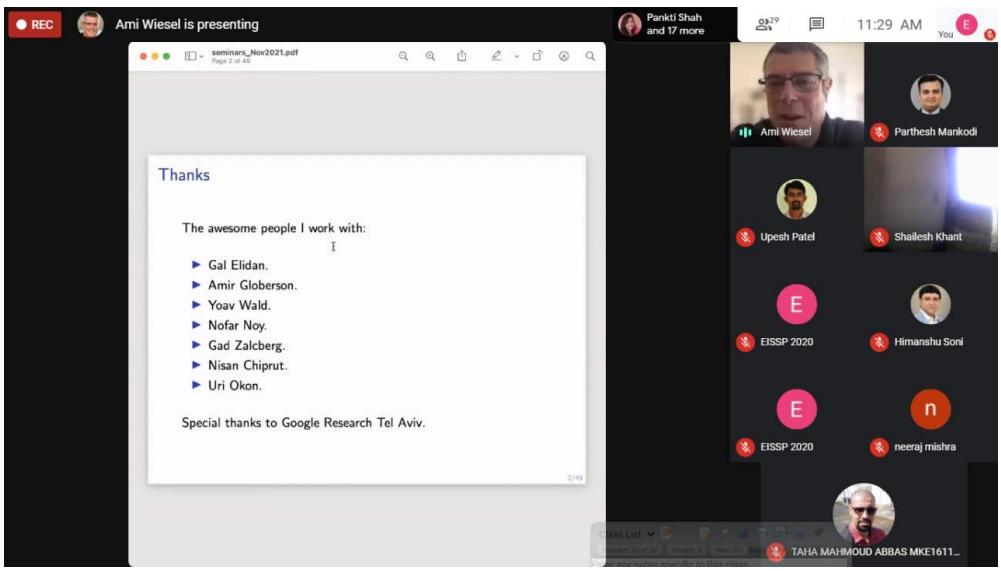
There were four keynote talks organized during e-ISSP 2020. Briefs of these talks alongwith a few glimpses are shown below:

- **Keynote Talk – I: "Three examples of *'easy'* Non – Convex Optimizations" 29/12/2020, Time: 11.30 am to 12. 30 pm**

Ami Wiesel
The Rachel and Selim Benin School of Computer Science and Engg, Hebrew University of Jerusalem

Ami Wiesel received the B.Sc. and M.Sc. degrees in electrical engineering from Tel-Aviv University, Tel-Aviv, Israel, in 2000 and 2002, respectively, and the Ph.D. degree in electrical engineering from the Technion - Israel Institute of Technology, Haifa, Israel, in 2007. He was a postdoctoral fellow with the Department of Electrical Engineering and Computer Science, University of Michigan, Ann Arbor, USA, during 2007–2009. He is currently an Associate Professor in the Rachel and Selim Benin School of Computer Science and Engineering, Hebrew University of Jerusalem, Israel. Since 2018, he is also a Visiting Researcher in Google. He is an IEEE SPS Distinguished Lecturer for 2020.



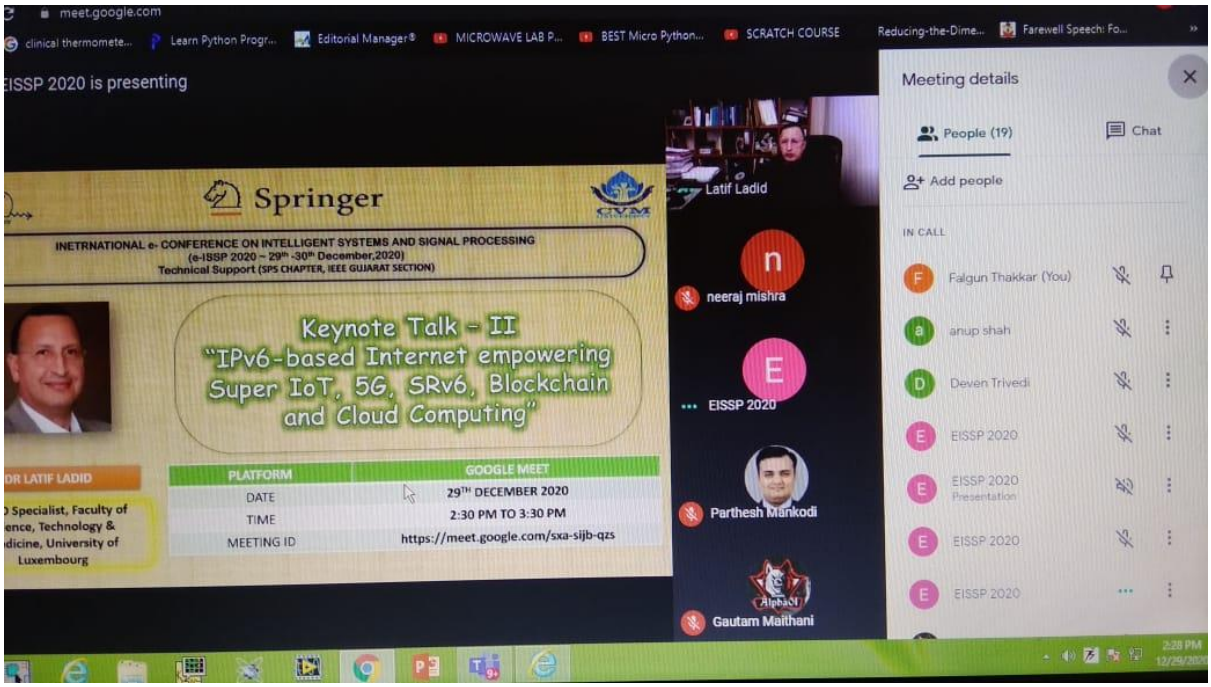


- **Keynote Talk – II: "IPv6-based Internet empowering Super IoT, 5G, SRv6, Blockchain and Cloud Computing"**
  29/12/2020, Time: 2.30 pm to 3.30 pm

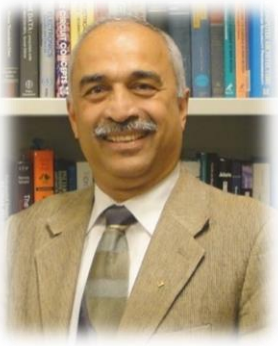
Latif Ladid

Research& Development Specialist, Faculty of Science, Technology &Medicine, University of Luxembourg

Latif LADID is the Founder & President, IPv6 FORUM (www.ipv6forum.org); Member of 3GPP PCG (Board) (www.3gpp.org); IEEE 5G Future networks Initiative Steering Committee Membe; IEEE IoT Initiative Steering Committee Member; Emeritus Trustee, Internet Society - ISOC (www.isoc.org); IPv6 Ready & Enabled Logos Program Board (www.ipv6ready.org); World summit Award Board Member (www.wsis-award.org); Chair, ETSI IPv6 Industry Specification Group https://portal.etsi.org/tb.aspx?tbid=827&SubTB=827 ; Member of 3GPP2 PCG (www.3gpp2.org); Member of Future Internet Forum EU Member States (representing Luxembourg).



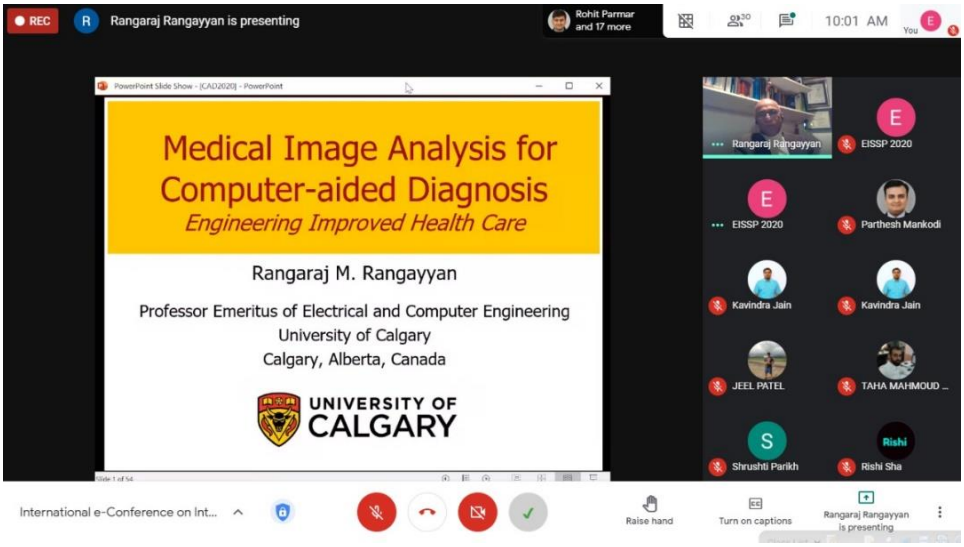
- **Keynote Talk – III: "Computer-aided Diagnosis: Engineering Improved Health Care"**
  30/12/2020, Time: 10.00 am to 11. 00 am

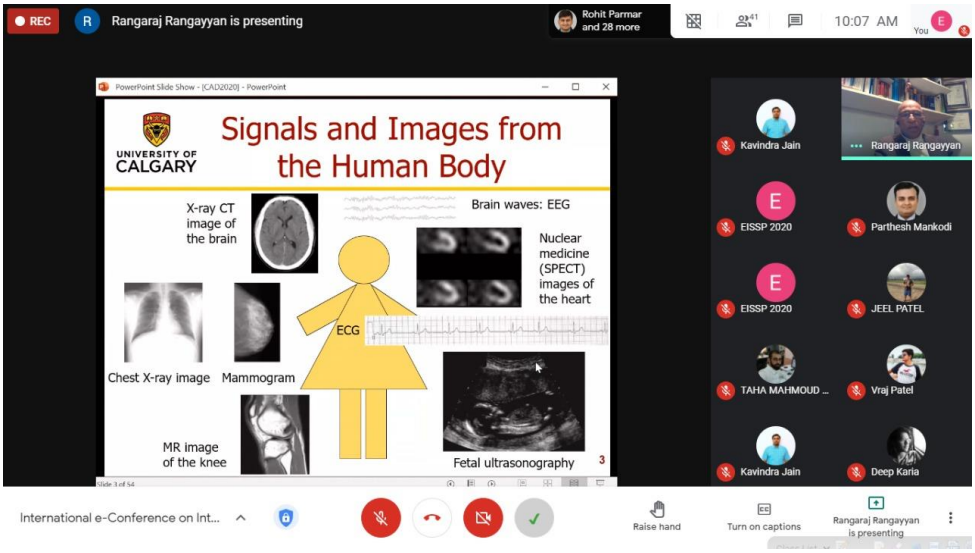


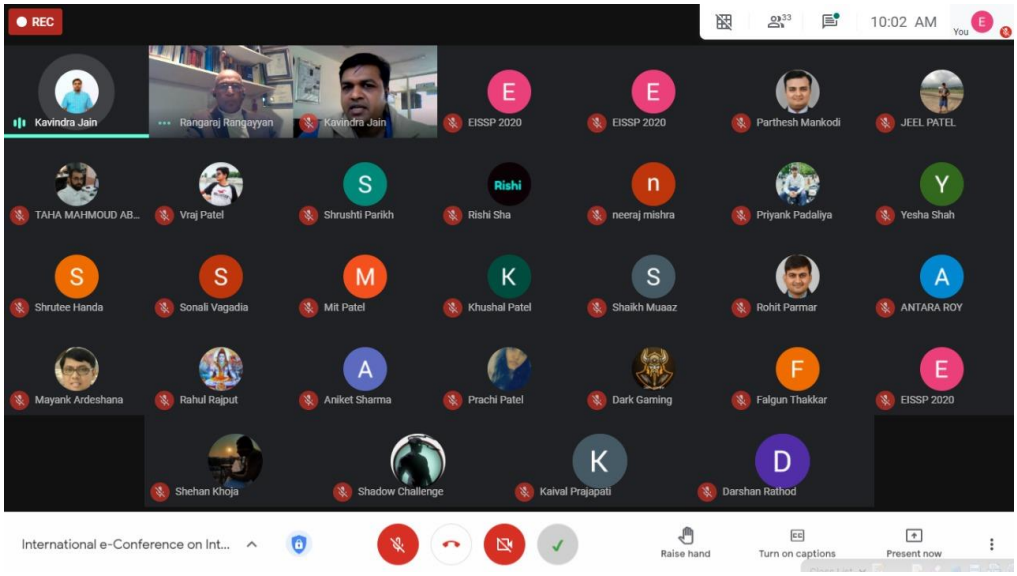
Rangraj Rangayyan

Professor Emeritus of Electrical and Computer Engineering, University of Calgary

Dr. Rangaraj M. Rangayyan is a Professor Emeritus of Electrical and Computer Engineering at the University of Calgary, Calgary, Alberta, Canada. He received the Bachelor of Engineering degree in Electronics and Communication Engineering in 1976 from the University of Mysore at the People's Education Society College of Engineering, Mandya, Karnataka, India, and the Ph.D. in Electrical Engineering from the Indian Institute of Science, Bangalore, Karnataka, India, in 1980. He served the University of Manitoba, Winnipeg, Manitoba, Canada and the University of Calgary in research, academic, and administrative positions from 1981 to 2016. His research interests are in digital signal and image processing, biomedical signal and image analysis, and computer-aided diagnosis.



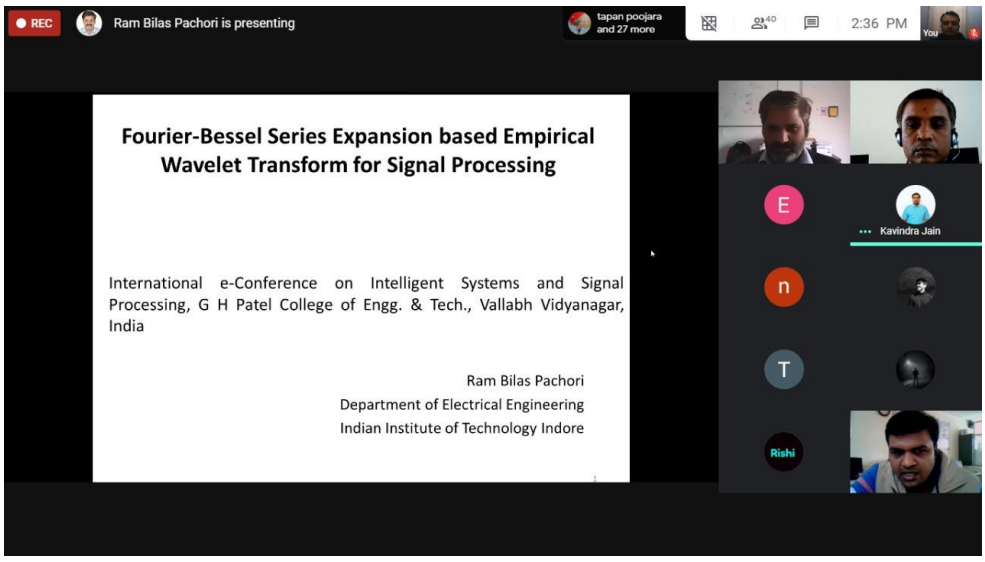




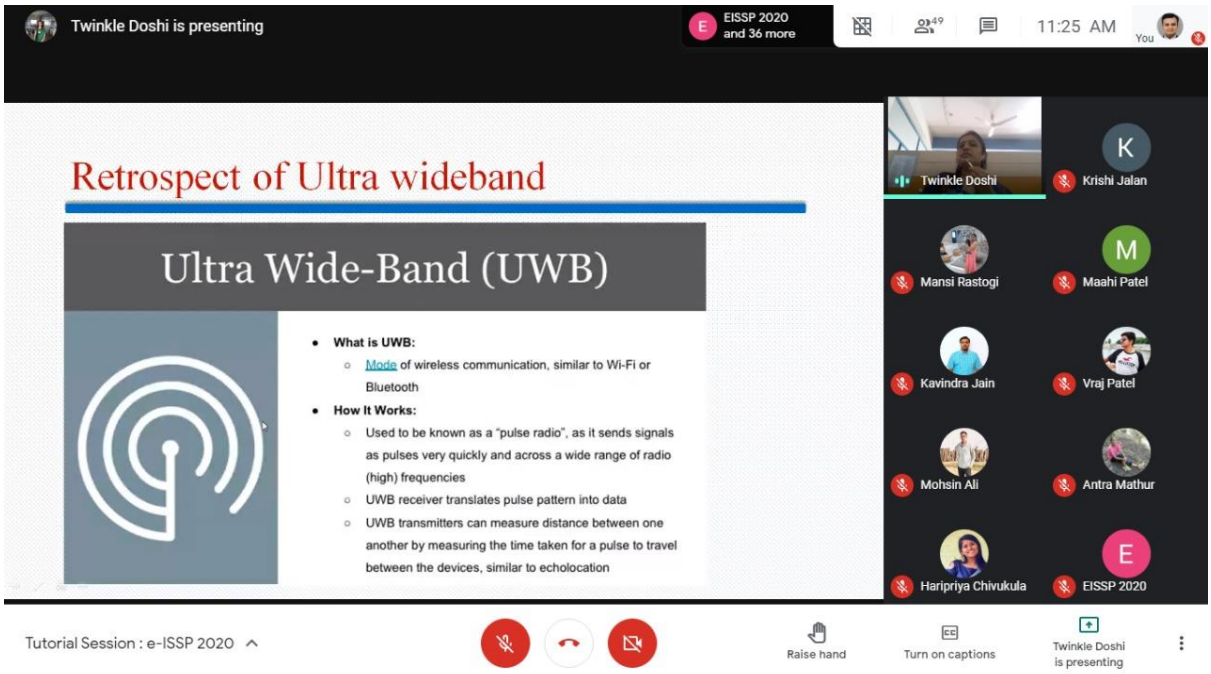
- **Keynote Talk – IV: "Fourier- Bessel Series Expansion-Based Empirical Wavelet Transform for Signal Processing"**
  30/12/2020, Time: 2.30 pm to 3.30 pm

Ram Bilas Pachori
Professor, Department of Electrical Engineering, Indian Institute of Technology Indore

Ram Bilas Pachori received the B.E. degree with honours in Electronics and Communication Engineering from Rajiv Gandhi Technological University, Bhopal, India in 2001, the M. Tech. and Ph.D. degrees in Electrical Engineering from Indian Institute of Technology (IIT) Kanpur, Kanpur, India in 2003 and 2008, respectively. He worked as a Postdoctoral Fellow at Charles Delaunay Institute, University of Technology of Troyes, Troyes, France during 2007-2008. He served as an Assistant Professor at Communication Research Center, International Institute of Information Technology, Hyderabad, India during 2008-2009. He served as an Assistant Professor at Department of Electrical Engineering, IIT Indore, Indore, India during 2009-2013. He worked as an Associate Professor at Department of Electrical Engineering, IIT Indore, Indore, India during 2013-2017 where presently he has been working as a Professor since 2017. He was a Visiting Professor at School of Medicine, Faculty of Health and Medical Sciences, Taylor's University, Subang Jaya, Malaysia during 2018-2019.



A tutorial session on “Recent Trends in UWB and its Applications” was also organized on 30/12/2020 during 11.30 am to 1.00 pm.



Following track-wise papers have been presented during e-ISSP 2020:

Track 1. Signal Processing & Communication Engineering

Sr. No.	Paper ID	Paper Title with Author's Name
1	**SPCE21**	Design and Analysis of Modified Split Ring Resonator Structured Multiband Antenna for WCDMA and WiMAX Applications Upesh Patel, Trushit Upadhyaya, Rajat Pandey, Arpan Desai, Killol Pandya
2	**SPCE27**	A WEARABLE FINGER EXOSKELETON FOR MOTOR REHABILITATION USING MOBILE APPLICATION Snehalatha U, Satya Harsha Vardhan Muppidi, Lakshmi Swathi Akkiraju
3	**SPCE32**	Game theoretical approach for cluster-based routing protocol in Wireless Sensor Network Namrata Sahayam, Anjana Jain, Shekhar Sharma.
4	**SPCE33**	Advanced Digital Signal Processing for Interference Mitigation in Very High Throughput Satellite Neeraj Mishra, Deepak Mishra, Nagendra Gajjar , and Kiran Parmar
5	**SPCE42**	Low-Power Endoscopic Image Compression Algorithms Using Modified Golomb codes Kinde A. Fante and Basabi Bhaumik
6	**SPCE45**	Image Steganography Using Ridgelet Transform and SVD **Mansi Subhedar**
7	**SPCE63**	**Performance evaluation of prediction algorithm based tracking methods in a recovery of a lost target using Wireless Sensor Network** Alpesh Sankaliya and Maulin Joshi

8	**SPCE66**	An Efficient Convolutional Neural Network for Acute Pain Recognition using HRV Features Saranya Devi Subramaniam and Brindha Dass
9	**SPCE67**	Design and development ofLSTM–RNN model for the prediction of RR intervals in ECG signals B. Dhananjay, N. PrasannaVenkatesh, AryaBhardwaj, J. Sivaraman
10	**SPCE70**	FHSS SignalsClassification by Linear Discriminant in a Multi-Signal Environment Muhammad Turyalai Khan, Ahmad Zuri Sha'ameri, Muhammad Mun'im Ahmad Zabidi, and Chia Chun Choon
11	**SPCE76**	Non-Invasive Thyroid Detection Using Thermal Imaging Technique A.R.Reshma Ruth Pauline,T. Rajalakshmi,Vijay Sai P, S.Rajalakshmi, R. Jai Reethikha,U.Snekhalatha
12	**SPCE80**	Non Orthogonal Multiple Access Techniques for Next Generation Wireless Networks: A Review Najuk Parekh and Rutvij Joshi
13	**SPCE81**	Triple band circular patch antenna using complimentary split ring resonators Falguni Raval
14	**SPCE82**	Features Analysis of Electroencephalography (EEG) for Mindfulness Meditation Effect on Cancer Patient toward Stress Level Khor En Yu, Lim Chee Chin, Chong Yen Fook, and Lee Poh Foong
15	**SPCE89**	Effects of menstrual cycle on atrial ECG components Ankita Padhan, Arya Bhardwaj, J. Sivaraman
16	**SPCE93**	Performance Assessment of Waveform Modulation Methods for Fifth-Generation Wireless Systems Getachew H. Geleta, Kinde A. Fante and Dereje M. Molla
17	**SPCE94**	Design and Fabrication of CPW fed Jeans antenna working at 2.4 GHz ISM band Poonam Thanki and Falguni Raval
18	**SPCE100**	Effect of Artifacts on the Interpretation of Eeg Based Functional Connectivity Estimation Using Partial Directed Coherence Taha Mahmoud Al-Naimi, Ahmad Zuri Sha'ameri and Norlaili Mat Safri
19	**SPCE106**	Development of Optimal Corrected PTa Interval formula for different heart rates ShaikKarimulla, Arya Bhardwaj, J. Sivaraman, B. Dhananjay
20	**SPCE114**	Medical Image FusionUsing Lifting Wavelet and Fractional Bird Swarm Optimization Jayant Bhardwaj , Abhijit Nayak
21	**SPCE126**	Review on Beamforming Techniques for Millimeter Wave Massive MIMO Gayatri D. Londhe and Vaibhav S. Hendre
22	**SPCE127**	False Arrhythmia Alarms Detection through ECG Signals VikneswaranVijean, GunashareeneR.Pavinthiran, Chong Yen Fook, Lim Chee Chin, SaidatulArdeenawatiAwang, HariharanMuthusamy
23	**SPCE129**	Human recognition using Omni-directional Camera for Service Robot Application A.H. Ismail, M.N. Ayob, Hassrizal H.B., M.S.M. Azmi, M.S.M Hashim, S.M. Othman, S.N.A.M. Kanafiah, M.K.Ali Hassan and I.I. Ibrahim

Track 2. Applied Electronics and Emerging Technologies

Sr. No.	Paper ID	Paper Title with Author's Name
1	**AEET40**	Grid synchronization for three-phase grid-tied converter using Decouple Second-order generalized integrator Bhavik Brahmbhatt and Hina Chandwani
2	**AEET55**	Regression Based Model of Low Cost Air Quality Monitoring System Mitul Kumar Ahirwal, Gautam Patidar, Neeraj, Sandeep Kumar, Amit
3	**AEET62**	Initial Results on High Sensitivity Magnetic Induction Spectroscopy Circuit for Metal Detection in Human Body Khor Gin Haur, Zulkarnay Zakaria, Jaysuman Pusppanathan, Anas Mohd Noor, Ahmad Nasrul Norali, Chong Yen Fook, Asyraf Hakimi Abu Bakar, Muhamad Khairul Ali Hassan, Muhammad Juhairi Aziz Safar, Ahmad Faizal Salleh
4	**AEET85**	Comparative Performance of CMOS Active Inductor Darshak B. Marvania , Dhruvi S. Parikh , Dhara P. Patel
5	**AEET86**	Continuous Monitoring of Banana Plantations Soham Gandhi and Anup Shah
6	**AEET88**	An experimental study to evolutes performance of PV module at workplace Sohankumar G. Prajapati, Sanjay R. Vyas
7	**AEET99**	Automatic Capacitor Switching Method for Power Factor Improvement with HMI Interface and Cloud Data Logger Risfendra, Gheri Febri Ananda
8	**AEET107**	Analysis of novel 15Gbps WDM-FSO system employing hybrid amplifier under various weather conditions Preet Kaur, Maninder Singh, Manish Sharma, Rajeev Kumar
9	**AEET109**	Optimized Molecular Structure, Vibrational Spectra and Frontier Molecular Orbitals of 1,4-Benzene Diamine with Palladium Electrodes As a Molecular Switch -A Computational Analysis T. Rafsa Koyadeen, A.R Abdul Rajak and Vilas H. Gaidhane

Track 3. Computer Vision and Artificial Intelligence

Sr. No.	Paper ID	Paper Title with Author's Name
1	**CVAI3**	Bag of Visual Words Methodology in Remote Sensing – A Review Jyoti S. Shukla, Kriti Rastogi, Dr. Hetal Patel, Dr. Gaurav Jain and Shashikant Sharma
2	**CVAI10**	Automated segmentation and classification of Psoriasis hand thermal images using machine learning algorithm U.Snekhalatha, Meghna Sampath, Nelufer, Sakshi Srivastava
3	**CVAI23**	Thermal imaging analysis in detection of childhood obesity in cervical region using machine learning classifiers Richa Rashmi, U.Snekhalatha
4	**CVAI36**	Real-Time Tomato Detection, Classification and Counting System Using Deep Learning and Embedded Systems Stavan Ruparelia, Monil Jethva and Ruchi Gajjar
5	**CVAI39**	A Standard Proposed Voice-Based Application for Virtual-Assistance on Cloud Service Platforms Jeel Patel, Jiya Patel
6	**CVAI46**	Covid-19 Detection Using CNN and Decision Tree Uttaran Roychowdhury · Mansi Subhedar
7	**CVAI49**	A Novel Approach for Spoken Language Identification and Performance Comparison using Machine Learning based classifiers and Neural Network Vishal Tank, Dr. Manthan Manavadaria and Krupal Dudhat
8	**CVAI53**	A Systematic literature review on Health Recommender Systems Jagruti Prajapati, and Keyur N. Brahmbhatt
9	**CVAI58**	DNA Cryptography based Speech Security System Shaikh Akib Shahriyar, Shovan Bhowmik, and Mahedi Hasan
10	**CVAI77**	Obesity detection in thermal imaging using convolution neural network: A comparison with machine learning models Snekhalatha.U, Palani thanaraj.K, Sangamithrai. K
11	**CVAI79**	Non-Invasive Technique For Detecting Neonatal Jaundice Nihila S, T.Rajalakshmi, Shradha Suman Panda, Nyelham Lhazay ,GangaDevi Giri
12	**CVAI83**	Augmented Reality Implementation on Physical Therapy Exercise Ahmad Nasrul Norali , Anas Mohd Noor, Zulkarnay Zakaria , Khor Wan Yi ,Chong Yen Fook, Asyraf Hakimi Abu Bakar
13	**CVAI90**	Deep Learning Based Body Mass Index (BMI) Prediction Using Pre-trained CNN Models Nur Alifah Megat Abd Mana, Chong Yen Fook, Lim Chee Chin, Vikneswaran Vijean[1,2], Saidatul Ardeenawatie[1,2], and Hariharan Muthusamy
14	**CVAI98**	An Effective Approach to Classify White Blood Cell using CNN Kinjal A. Patel , Kinjal K. Gandhi, Ankit S. Vyas
15	**CVAI101**	Video Summarization for Multiple Sports Using Deep Learning Chakradhar Guntuboina , Aditya Porwal , Preet Jain , and Hansa Shingrakhia

16	**CVAI105**	Extraction and Recognition of Handwritten Gujarati Characters and Numerals from Images Using Deep Learning Deepika Shukla, Apurva Desai
17	**CVAI111**	Application Of Machine Learning For Estimating Empirical Parameters For Rectangular Microstrip Patch Antenna Pankti Shah, and Dr. Amit Patel
18	**CVAI116**	Leveraging Transfer Learning for Binary Classification of Images with CNN Mayank Jha, Om Amrit, Harsh Jain, Mayank Sharma, Achal Kaushik

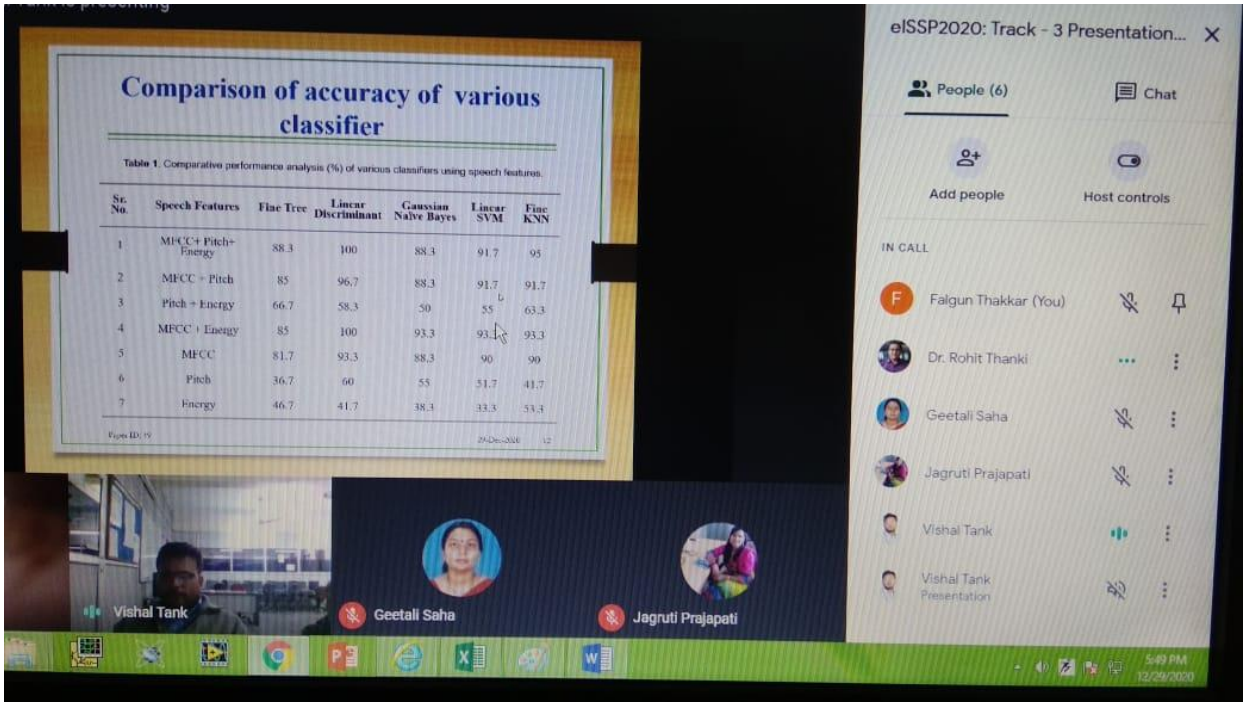
Track 4. Big Data, IoT and Cloud Computing

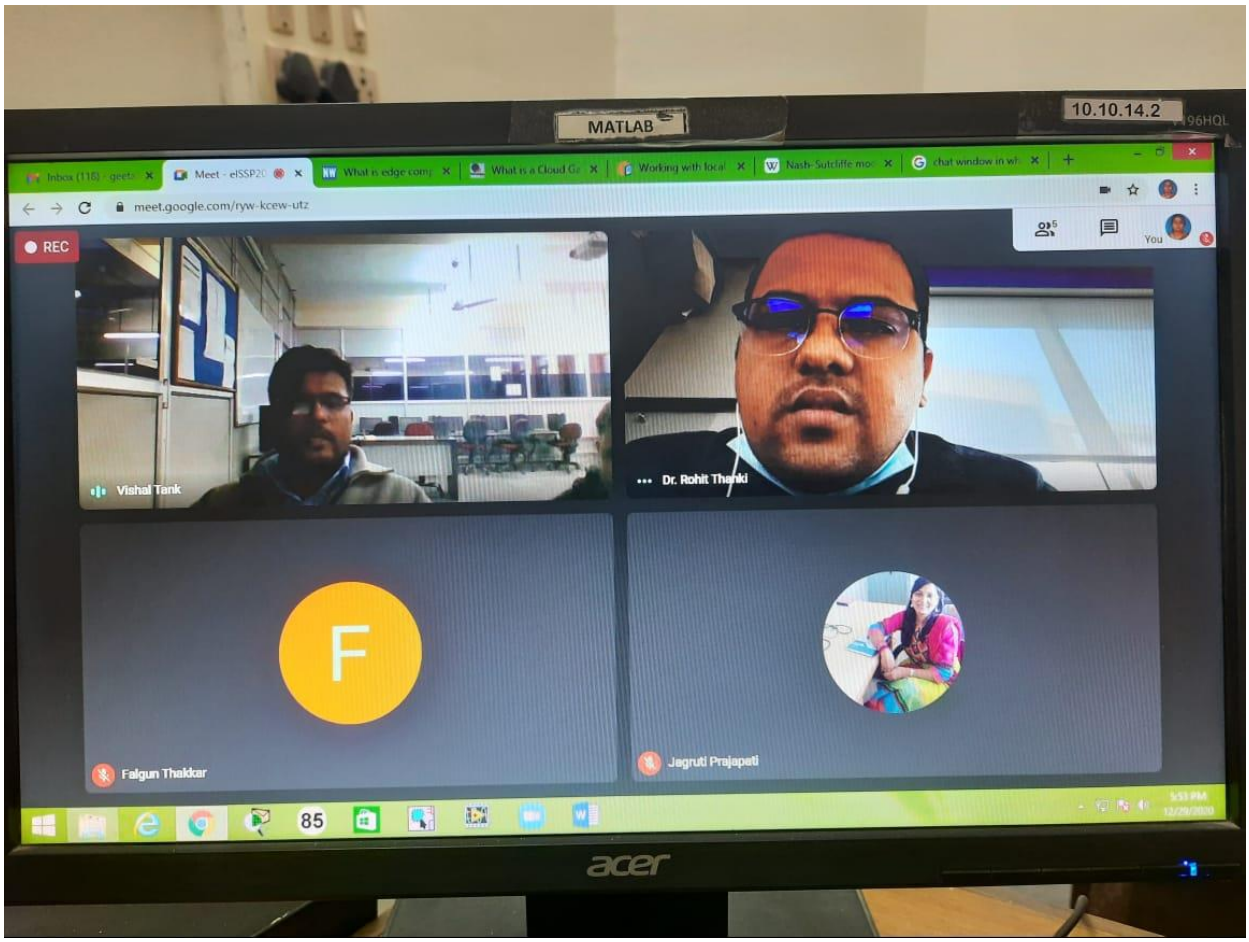
Sr. No.	Paper ID	Paper Title with Author's Name
1	**BDICC26**	Shortest pathfinder for Air Traffic Network: A Graph based Analysis Piyushi Jain, Drashti Patel, and Jai Prakash Verma
2	**BDICC30**	Power Constrained Performance Evaluation of AODV, OLSR and DSDV Routing Protocols for Vehicular Ad-hoc Networks Prof. Amit Choksi and Dr. Mehul Shah
3	**BDICC56**	Remote Monitoring and Predictive Maintenance on Medical Devices Mohammed Salleh Ahmed Qaid, Anas Mohd Noor, Ahmad Nasrul Norali[1,2], Zulkarnay Zakaria[1,2] , A. Z. Ahmad Firdaus, Asyraf Hakimi Abu Bakar and Chong Yen Fook
4	**BDICC59**	A review of approaches to Energy Aware Multi-Hop Routing for Lifetime Enhancement in Wireless Sensor Networks M Abdul Jawad and Farida Khurshid

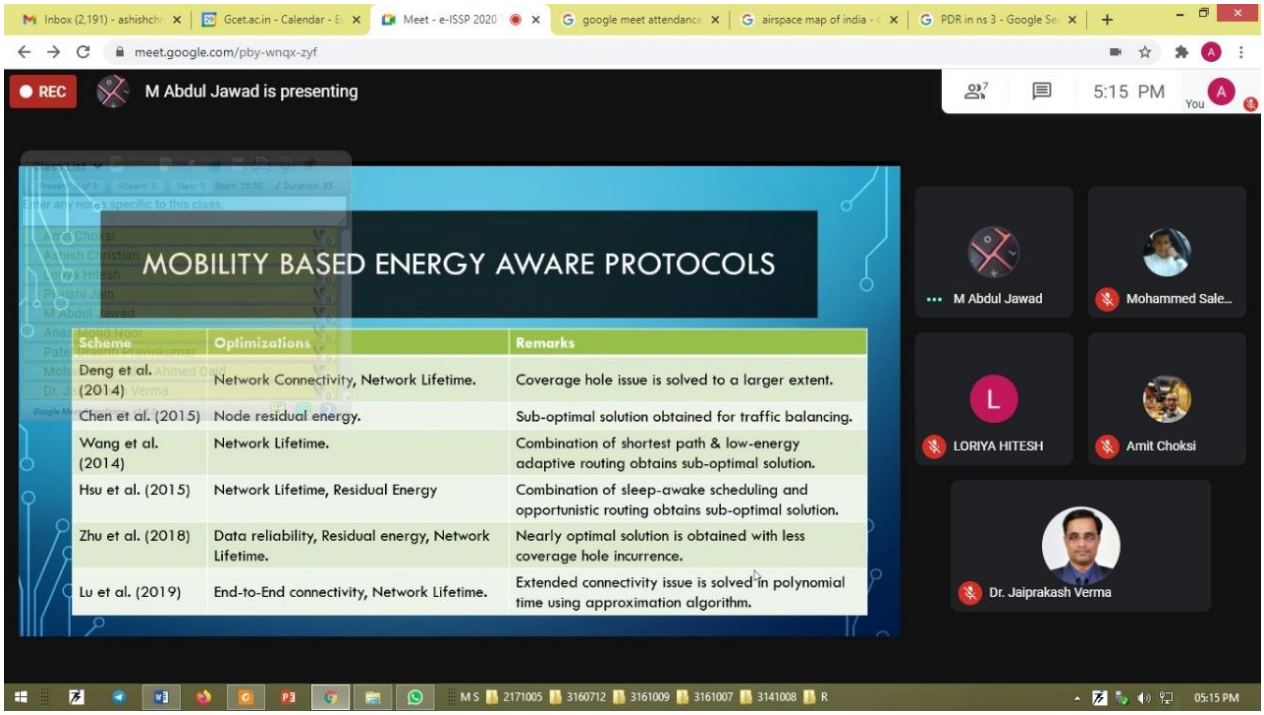
Track 5 & 6. Industrial Automation and Robotics, Interdisciplinary Areas

Sr. No.	Paper Code	Paper Title with Author's Name
1	**IARI11**	Sensor Based Smart Glove for Rehabilitation of Paralysis patients U Snekhalatha, Haritha Nair, Nehaa Pravin
2	**IARI73**	Wireless Robot Control Using Wrist Movements from Surface Electromyogram Signal Ng Chooi Rou, Chong Yen Fook a, Lim Chee Chin, Zulkarnay Zakaria, Asyraf Hakimi, Abu Bakar, Ahmad Nasrul Norali and Anas Mohd Noor
3	**IARI104**	COVID-19 in Malaysia: A Correlation and Regression Analysis on the Imported Cases and Local Transmission Chow-Khuen Chan[1], Ho-Kin Tang[2], Sim-Kuan Goh[3], and Masni Azian Akiah
4	**IARI135**	AROGYAKAVACHAM- Automatic Hand Sanitizer Dispenser with Temperature Measurement Harshil Sathwara[1*], Parth Vaghela[1], and Smita Joshi[2]

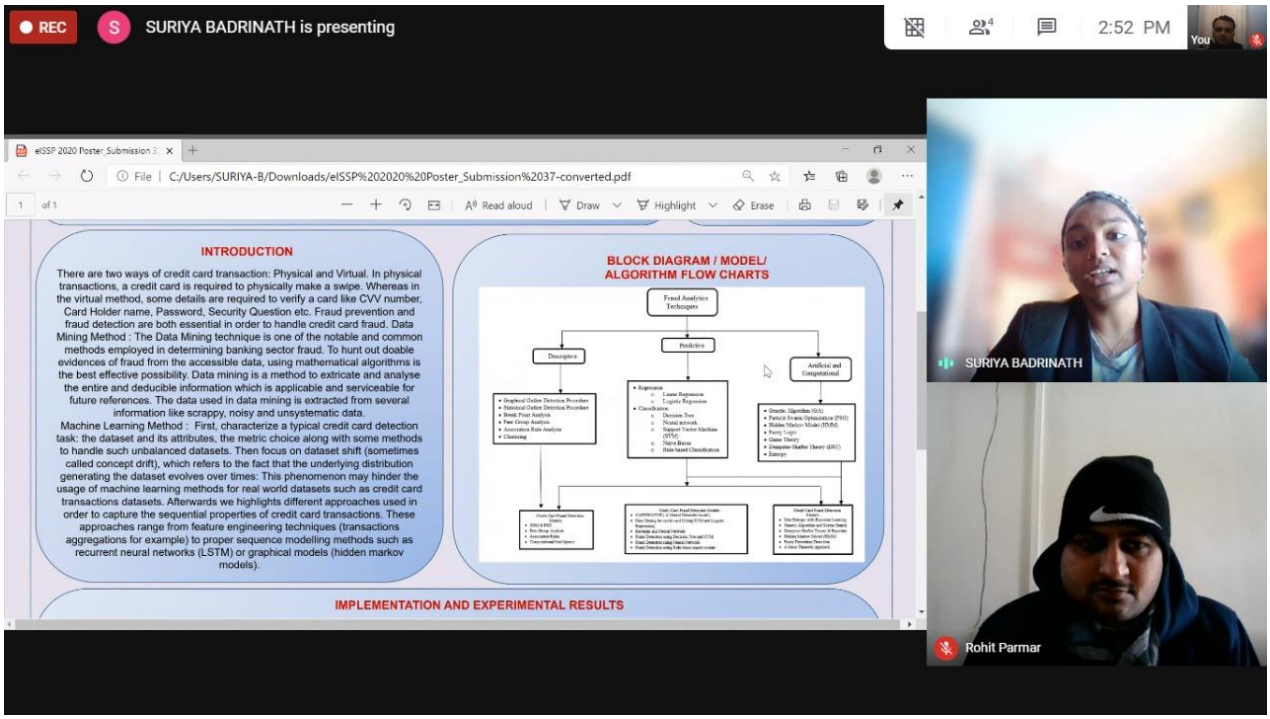
Few glimpses of paper presentation of various tracks are:

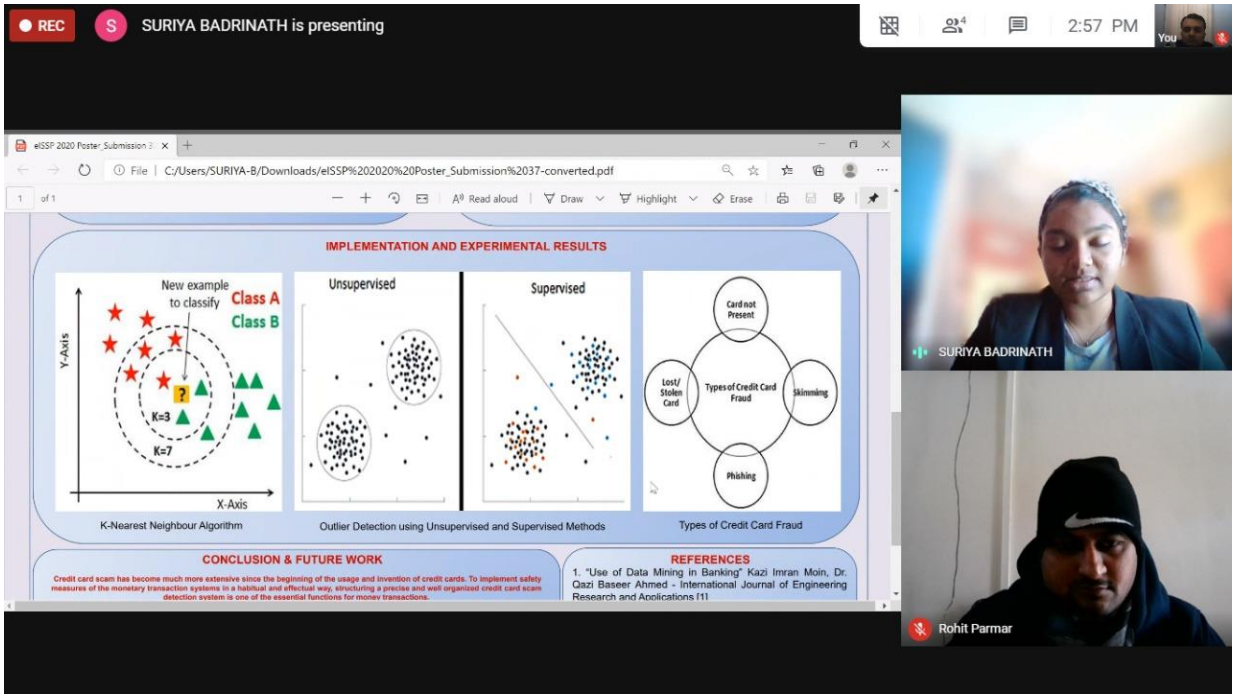






Scheme	Optimizations	Remarks
Deng et al. (2014)	Network Connectivity, Network Lifetime.	Coverage hole issue is solved to a larger extent.
Chen et al. (2015)	Node residual energy.	Sub-optimal solution obtained for traffic balancing.
Wang et al. (2014)	Network Lifetime.	Combination of shortest path & low-energy adaptive routing obtains sub-optimal solution.
Hsu et al. (2015)	Network Lifetime, Residual Energy	Combination of sleep-awake scheduling and opportunistic routing obtains sub-optimal solution.
Zhu et al. (2018)	Data reliability, Residual energy, Network Lifetime.	Nearly optimal solution is obtained with less coverage hole incurrence.
Lu et al. (2019)	End-to-End connectivity, Network Lifetime.	Extended connectivity issue is solved in polynomial time using approximation algorithm.

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SURIYA BADRINATH is presenting
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IMPLEMENTATION AND EXPERIMENTAL RESULTS
New example to classify
Class A
Class B
Y-Axis
X-Axis
K=3
K=7
K-Nearest Neighbour Algorithm
Unsupervised
Supervised
Outlier Detection using Unsupervised and Supervised Methods
Card not Present
Lost/ Stolen Card
Types of Credit Card Fraud
Skimming
Phishing
Types of Credit Card Fraud
CONCLUSION & FUTURE WORK
REFERENCES
1. "Use of Data Mining in Banking" Kazi Imran Moin, Dr. Qazi Baseer Ahmed - International Journal of Engineering
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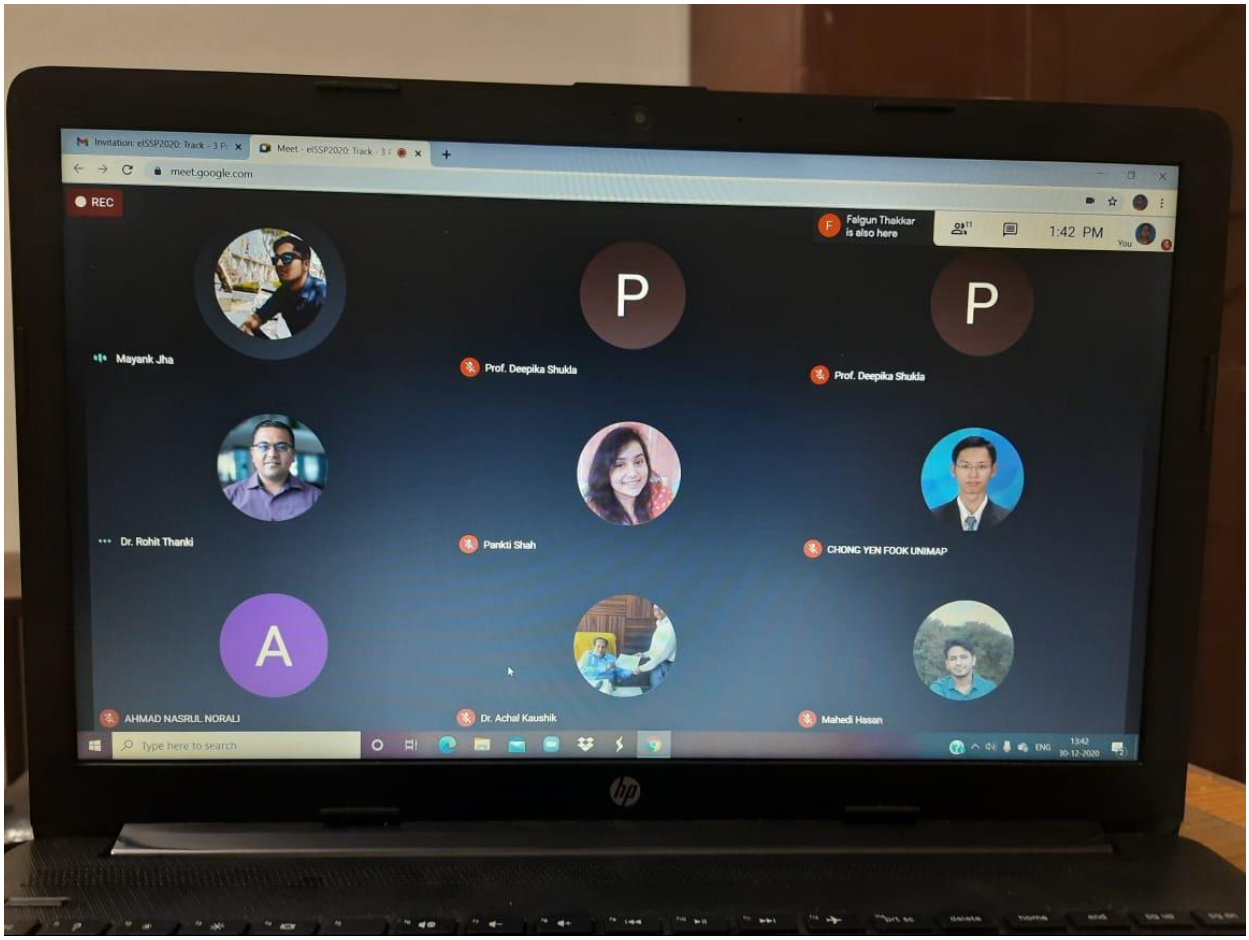
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