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RESEARCH PUBLICATIONS

Journal:

1. Neeru Rathee, Sudesh Pahal, “Real time Pain detection from facial expressions using domain adaptation technique”, Pattern Analysis and Applications (PAAA) (accepted with revision), SCI-indexed, 2020.
2. N. Rathee, S. Pahal , D. Sheoran, “Evaluating the Uncertainty of Classification Due to Image Resizing Techniques for Satellite Image Classification”, MAPAN., pp.1-9, 2021 May.(SCI Indexed)
3. Pahal S, Rathee N. Evaluating Uncertainty of Measurement While Predicting Location in Smart Vehicles. MAPAN. 2021 May 31:1-2. (SCI Indexed)
4. N. Rathee, D. Ganotra, A. Rathee, “Facial action unit intensity detection by extracting complimentary information using distance metric learning”, “IETE Journal of Research, vol. 66, no. 2, pp. 214-223, 2020. (SCI Indexed IF= 1.030) Print ISSN: 0377-2063 Online ISSN: 0974-780X
5. N. Rathee, D Ganotra, “Discriminative Analysis of Lip Features for Emotion Recognition”, International Journal of Computational Vision and Robotics, vol.7, no.6, pp.669-691, 2018, ISSN :1752-914X. (Scopus Indexed)
6. N. Rathee, D Ganotra, “A novel approach for pain intensity detection based on facial feature deformations”, Journal of Visual Communication and Image Representation, vol. 33, pp. 247-254, 2015 (SCI Indexed IF= 2.479). ISSN: 1047-3203



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7. N. Rathee, D Ganotra, "Multiview Distance Metric Learning on facial feature descriptors for automatic pain intensity detection." *Computer Vision and Image Understanding*, vol. 147, pp. 77-86, 2016 (SCI Indexed IF= 3.121). ISSN: 1077-3142
8. N. Rathee, D Ganotra , "An efficient approach for facial action unit intensity detection using distance metric learning based on cosine similarity", *Signal, Image and Video Processing*, vol 12, pp. 1141–1148 , 2018, (SCI Indexed IF = 2.15), ISSN 1863-171.
9. N. Rathee, D Ganotra, "Modelling Facial Features for Emotion Recognition and Synthesis", *IETE Journal of Research*, vol.63, no.6, pp 845-852, (SCI Indexed IF= 1.030) Print ISSN: 0377-2063 Online ISSN: 0974-780X, 2017
10. N. Rathee, D Ganotra , "Analysis of human lip features: a review", *International Journal of Applied Systemic Studies*, vol. 6, no.2, pp.137-184, 2015(ISSN 1751-0597)(Scopus Indexed)
11. S. Pahal, N. Rathee, "Analysis of hysteresis margin for effective handover in 4G wireless networks", *ICTACT Journal on Communication Technology*, vol.7, No. 4, pp. 1438-1442, December 2016, ISSN: 2229-6948(online)
12. S. Pahal, N. Rathee, P. Chaudhary, "QoS and Energy efficient network selection based on Topsis in Heterogeneous wireless networks", *Satyam-MSIT Journal of Research*, vol.1, no.2, pp. 30-35, 2013.
13. N. Rathee, "Comparative Analysis of Image Stegnography using LSB and BPCS Technique," *International Journal of Image Processing and Visual Communication*, Vol. 4, no.3, Nov. 2016 pp.1438-1442, ISSN 2319-1724
14. SP Singh, N Rathee, H Gupta, P Zamboni, AV Singh, "Contactless and Hassle Free Real Time Heart Rate Measurement with Facial Video", *Journal of Cardiac Critical Care TSS*, vol. 1, no.1, pp 024-029, 2017 ISSN: 2456-9224

Book:

1. N. Rathee, "A hearing aid to Deaf and Dumb People", Lambert Academic Publishing, 2016, ISSN : 978-3-659-69653-4.
2. N. Rathee, "Startup guidance for facial expression analysis", Lambert Academic Publishing, 2017, 978-3-330-08943-3

Book Chapter:

1. Rathee, Neeru, and Dinesh Ganotra. "A Novel Approach for Continuous Pain Intensity Estimation." In *Proceeding of International Conference on Intelligent Communication, Control and Devices*, vol.479, pp. 343-350. Springer Singapore, 2017, ISBN: 978-981-10-1708-7
2. N. Rathee, "Continuous Emotion Recognition: Sparsity Analysis", *Progress in Intelligent Computing Techniques: Theory, Practice, and Applications* Springer, Vol. 518 (In Press).ISBN: 978-981-10-3372-8,pp.265-270
3. N. Rathee, A. Rathee, "Improved iris biometric system by exploring iris texture features", *Communication and Computing Systems: Proceedings of the International Conference on Communication and Computing Systems (ICCCS*

2016), Gurgaon, India, 9-11 September, 2016, pp. 113-117, CRC Press, ISBN 9781138029521 - CAT# K29517

4. Vaish, Ashutosh, Sagar Gupta, and Neeru Rathee. "Enhancing Emotion Detection Using Metric Learning Approach." In *Innovations in Computer Science and Engineering*, pp. 317-323. Springer, Singapore, 2019, ISBN: 978-981-10-8201-6
5. R. Devasia, A. Gupta, S. Sharma, S. Singh and N. Rathee, "Electronic Guitar MIDI Controller for Various Musical Instruments Using Charlieplexing Method", in *Innovations in Computer Science and Engineering, Lecture Notes in Networks and Systems 74*, Springer Nature Singapore Pte Ltd., Springer 2019 pp. 315-325, Print ISBN978-981-13-7081-6, Online ISBN978-981-13-7082-3
6. Raut S., Rathee N. (2021) Comparative Study on Machine Learning Classifiers for Epileptic Seizure Detection in Reference to EEG Signals. In: Bansal P., Tushir M., Balas V., Srivastava R. (eds) *Proceedings of International Conference on Artificial Intelligence and Applications. Advances in Intelligent Systems and Computing*, vol 1164, 185-194, Springer, Singapore. https://doi.org/10.1007/978-981-15-4992-2_18

Conference/Poster Presentaion:

1. M. Tholia, N. Rathee, "Micro Expression Analysis :A Review", 3rd Springer International Conference on Computing Informatics and Networks 2020, 29th -30th July, 2020 (ISBN: 978-981-15-9712-1). https://link.springer.com/chapter/10.1007/978-981-15-9712-1_11
2. Chatterjee, Joy, Sushil Chandra, Lalit Mohan Saini, Ronnie V. Daniel, and Neeru Rathee. "Effect of Screen Segmentation on Target Distractor Discrimination Task: an ERP Study." In *2020 International Conference on Communication and Signal Processing (ICCSP)*, pp. 252-256. IEEE, 2020. (<https://ieeexplore.ieee.org/abstract/document/9182118>)
3. P. Sheoran, N. Rathee and J. S. Saini, "Epileptic Seizure Detection using Bidimensional Empirical Mode Decomposition and Distance Metric Learning on Scalogram," *2020 7th International Conference on Signal Processing and Integrated Networks (SPIN)*, Noida, India, 2020, pp. 675-680, doi: 10.1109/SPIN48934.2020.9070962 (ISSN: 1947-8402).
4. Raut, Samriddhi, and Neeru Rathee. "Comparative Study on Machine Learning Classifiers for Epileptic Seizure Detection in Reference to EEG Signals." In *Proceedings of International Conference on Artificial Intelligence and Applications*, pp. 185-194. Springer, Singapore, 2020. ISSN: 2194-5357
5. N. Rathee, S. Pahal, "Investigation of facial expressions for physiological parameter measurement "International Conference on Advancements in Computing & Management ",JaganNath University, Jaipur, India during April 13-14, 2019. ISSN 2524-7565
6. N. Rathee, Jatin Babbar, "Satellite image analysis : A Review", *IEEE Third International Conference on Electrical, Computer and Communication*

Technologies, Koimbatore , SVS College of Engineering, Coimbatore, Tamil Nadu, Feb 20-22, 2019, 978-1-4799-6085-9.

7. Robinson Devasia, Aman Gupta, Sapna Sharma, Saurav Singh, Neeru Rathee “Electronic Guitar MIDI Controller for Various Musical Instruments using Charlie Plexing Method”, International Conference on Innovations in Computer Science & Engineering, Guru Nanak Institutions, Hyderabad, India, August 17-18, 2018 (ISBN 978-981-13-7082-3)
8. Ashutosh Vaish, Sagar Gupta and Dr. Neeru Rathee "Emotion detection through complementary facial features" accepted and in proceedings in 7th IEEE International Conference on Communications Systems and Network technologies-2017(CSNT-2017), held on November 11-13, 2017 at IIIT-Nagpur, Nagpur (ISBN: 9781538618615.)
9. N. Rathee, Nishtha. “Automatic AU intensity detection/estimation for Facial Expression Analysis: A Review”. International Conference on Inter Disciplinary Research in Engineering and Technology (2016), pp. 83-88. ISBN :978-81-929866-0-9 organized by DSIIDC, Govt Of India, 11-02-2016 to 12-02-2016.
10. N. Rathee, “A novel approach for lip Reading based on neural network”, IEEE International Conference on Computational Techniques in Information and Communication Technologies (ICCTICT), pp. 532-537. ISBN 978-1-5090-0082-1,2016 (11.03.2016-13.03.2016 GGSIPU)
11. G. Gupta and N. Rathee, "Performance comparison of Support Vector Regression and Relevance Vector Regression for facial expression recognition," IEEE International Conference on Soft Computing Techniques and Implementations (ICSCTI), Faridabad, 2015, pp. 1-6.doi: 10.1109/ICSCTI.2015.7489548 ISBN: 978-1-4673-6792-9(08.10.2015-10.10.2015)
12. N Rathee, A Kadian, R Sachdeva, V Dalel, Y Jaie, “Feature Fusion for Fake Indian Currency Detection”, IEEE 3rd International Conference on “Computing for Sustainable Global Development”, 16th - 18th March, 2016, pp 1934-1939., ISSN 0973-7529; ISBN 978-93-80544-20-5
13. N. Rathee, “Investigating Back Propagation Neural Network for Lip Reading,” IEEE International Conference on Computing, Communication and Automation (ICCCA2016), pp. 373-376, 29th -30th April, 2016. ISBN:978-1-5090-1666-2, Galgotia College of Engineering, New Delhi
14. N. Rathee, A. Vaish, S. Gupta “Adaptive System to Learn and Recognize Emotional State of Mind,” IEEE International Conference on Computing, Communication and Automation (ICCCA2016), pp.32-36, 29th -30th April, 2016. ISBN:978-1-5090-1666-2
15. N. Rathee, R Sachdeva, V Dalel, Y Jaie “A novel approach for Cryptography using Artificial Neural Network”, National Conference on Emerging Trends & Innovations in Electronics and Telecommunication, June 28, 2016. ISSN-2320-9801
16. N. Rathee, A. Gupta, S. Singh, R. Devasia, A. Bansal “Digital Resistance Box: An approach to generate desired value of resistance by automatically varying the potentiometer”, IEEE International Conference on Power Electronics, Intelligent

Control and Energy Systems, ISBN: 978-1-4673-8587-9, (in Press), 4th -6th July 2016.

17. N. Rathee, "Illumination Invariant Approach for Feature Extraction" In International conference on Intelligent Communication, Control and Devices, Springer, 2nd -3rd April, 2016.
18. N. Rathee, R. Devasia, A. Gupta, "Electronic Guitar" In International conference on Intelligent Communication, Control and Devices, Springer, 2nd -3rd April, 2016.
19. N. Rathee, A. Bansal, "Smart Home" In International conference on Intelligent Communication, Control and Devices, Springer, 2nd -3rd April, 2016.
20. N. Rathee, H. Chauhan, "Application of Artificial Intelligent in Daily Life" In International conference on Intelligent Communication, Control and Devices, Springer, 2nd -3rd April, 2016.
21. N. Rathee, A. Bansal, "Offline GPS Services using BTS GPS Location Services without Satellites" In International conference on Intelligent Communication, Control and Devices, Springer, 2nd -3rd April, 2016.
22. N. Rathee, "Non-invasive cardiac pulse measurement", International Virtual Conference on Computer Science and Technology (VirtulCom-2016) on 25 - 28 December, 2016, Indore Communicated and Accepted
2 papers in journal and 1 in Conference Communicated.

Other qualifications:

NPTEL Online course on "Deep Learning" of 12 weeks, July-Oct 2018 (Elite)

NPTEL Online course on "Machine Learning for Engineering and Science Applications" of 12 weeks, Jan- April 2019 (Elite)

NPTEL Online course on "Joy of Computing using Python" of 12 weeks, Aug-Dec. 2020 (Elite)

Trainings

Innovation Ambassador training (Advanced Level, Total 16 Sessions of 30 contact hours) conducted by MoE's Innovation Cell & AICTE during 30th June 2021 to 30th July 2021.

Online Orientation Training Programme for Mentors conducted by NITTTR from 21st June -25th June 2021.

Training on "Entrepreneurship Development Program" conducted as part of **IIC Innovation Ambassador Training Series** Organized by Institution's Innovation Council of MHRD's Innovation Cell, AICTE held at Lovely Professional University, Jalandhar, Punjab on 16-17 January 2020

IIC Online Sessions conducted by **Institution's Innovation Council (IIC)** of MHRD's Innovation Cell, New Delhi to promote Innovation, IPR, Entrepreneurship, and Start-ups among HEIs from 28th April to 22nd May 2020.

FDP on “Entrepreneurial Opportunity Identification and Project Formulation in Services Sector” by Entrepreneurship Development and Industrial Coordination Department from 13.05.2019 to 17.05.2019

Awards

- Mentorship Award: is given by Guru Gobind Singh Indra Prastha University for year 2017 in Inter college Competition
 - Best Faculty Award: is given by Maharaja Surajmal Institute of Technology for academic year 2017-18
 - Best Poster Award: In International conference on Intelligent Communication, Control and Devices (ICICCD-2016).
 - Best Paper Award: In National Conference on Emerging Trends and Innovation in Electronics and Telecommunication Engineering, (ETIETE-2016)
 - Research Excellence Award: is given by Maharaja Surajmal Institute of Technology for academic year 2019-20
 - Mentorship Certificate for Hult Prize Event: is given by 42nd President of the United States Bill Clinton as Clinton Global Initiative , 2021
 - Best Faculty Chapter was awarded to the institute by ISTE for the events conducted under the convenorship of Dr. Neeru Rathee
 - Best Paper Presentation Award in conference “ADMET 2021”
 - Recognized as Mentor by MHRD Innovation cell for 4 teams across India for nurturing their start up ideas
 - Recognized as Innovation Ambassador by MHRD
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Ph.D. Scholars:

- Guiding two Ph.D. students in joint Supervision

Teaching Experience

- Working as Associate Professor in Maharaja Surajmal Institute of Technology from 6th June 2017 to till date.
- Worked as Assistant Professor in Maharaja Surajmal Institute of Technology from 5th January 2012 to 5th June, 2017.
- Worked as Assistant Professor in Guru Premsookh Memorial College of Engineering from 7th March 2011 to 4th January, 2012
- Worked as Assistant Professor in Northern India Engineering College from 17th August, 2009 to 31st January, 2011
- Worked as Lecturer from 1st August 2006 to 30th August, 2007.

Projects and Patents

- Currently working on Project “Automatic Pain Intensity Detection by Analysing the Facial Expressions Caused Due to Pain” sponsored by Department of Science and Technology (DST).
- Working as collaborator head for project in collaboration with DRDO INMAS on Multimodal cognitive assessment using EEG, eye tracking and fNIR
Submitted a project in Bio-Med Hub Chandigarh on “Hearing by Camera: Automatic Lip Reading to Assist Hearing Impaired People”
- **Patent** on Point To Point Regression Analysis-Based Big Data Processing Using Machine Learning by Dr. Naresh Kumar, Dr. Adeel Hashmi, Dr. Neeru Rathee, Dr. Sudesh Pahal, Prabhjot Kaur Sidhu, Dr. Jyoti Yadav

Invited Expert Talks

- Invited as Plenary Speaker in International Conference on Pain Management, organized by OMICS, held in Canada (3rd -4th October, 2016)
- Invited as speaker for FDP on Signal processing at MAIT (June 2017)
- Invited talk for FDP in NIT Delhi on topic “Image Processing in Metrology” on 8th June 2018
- Invited Talk in DCRUST Murthal
- Invited talk on “Acupressure points for Healthcare” dated on 12.05.2020 in one week online faculty development programme on “SKILLS WE DEVELOPED DURING LOCKDOWN” conducted by the Department of Biomedical Engineering, DCRUST, Murthal (Sonapat) from May 10-16, 2020.

