

Profile Page



Name : Indu Saini
Designation : Assistant Professor
Department : Electronics and Comm. Engg.
Qualification : PhD Machine Learning Algorithms for Enhanced ECG Analysis (NIT Jalandhar)
M.Tech (By Research) Electronics & Communication (NIT Jalandhar)
B.Tech Electronics & Communication (GNDU Amritsar)
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Research Interests :

Biomedical Signal Processing, machine Learning Algorithms, Plant Signaling, VLSI Design

Other Profile Links :

Google Scholar Link :

Indu Saini [Click Here](#)

Journal Publications :

Year	Journal	Publication
2019	Australasian Physical and Engineering Sciences in Medicine, Article in press	Soni, N., Saini, I., Singh, B, "A morphologically robust chaotic map based approach to embed patient's confidential data securely in non-QRS regions of ECG signal"
2019	Communications in Computer and Information Science, Vol. 956, pp. 63-73	Kumar, A., Sood, N., Saini, I, "Electrical Signal Analysis of Different Types of Oxygen Efficient Plants"
2018	International Journal of Wavelets, Multiresolution and Information Processing 16(6),1850049	Verma, A.K., Saini, I., Saini, B.S, "The baseline wandering noise removal from ECG signal using forward-backward Riemann Liouville fractional integral-based empirical wavelet transform approach"
2018	Australasian Physical and Engineering Sciences in Medicine 41(2), pp. 519-539	Verma, A.K., Saini, I., Saini, B.S, "Alexander fractional differential window filter for ECG denoising"
2018	International Journal of Medical Engineering and Informatics 10(2), pp. 135-149	Jambholkr, T., Saini, B.S., Saini, I, "An adaptive thresholding technique for QRS-complex detection in ECG signal based on empirical wavelet transform"

2017	International Journal of Medical Engineering and Informatics 9(4), pp. 299-315	K., Saini, B.S., Saini, I, "Effect of age and postural related changes on cardiac autonomic function in the pre-menopausal and post-menopausal women"
2016	International Journal of Medical Engineering and Informatics, Inderscience, 8, 347-359	Dharmendra Gurve, Barjinder Singh Saini, Indu Saini, "An Improved Lossy And Lossless Combined ECG Data Compression Using ASCII Character Encoding"
2016	Journal of Medical Engineering and Technology, Taylor and Francis, Vol. 40. no. 5, pp. 223-238	K Rawal, B S Saini and I Saini, "Design of tree structure matched wavelet for HRV signals of Menstrual Cycle"
2016	International Journal of Medical Engineering and Informatics, (Inderscience), Vol. 9, no. 4, pp. 299-315	K. Rawal, B. S. Saini and I. Saini, "Effect of age and posture related changes on cardiac autonomic function in the premenopausal and postmenopausal women for HRV signals of menstrual cycle"
2015	Australasian Physical & Engineering Sciences in Medicine, Springer, vol. 38, no. 3, pp. 509-523	K Rawal, B S Saini and I Saini, "Adaptive correlation dimension method for analyzing Heart Rate Variability during Menstrual Cycle"
2014	Journal of Medical Engineering and Technology, Vol. 38, no. 3, pp. 115-124	Indu Saini, Dilbag Singh, Arun Khosla, "K-Nearest Neighbor-based algorithm for P and T-waves detection and delineation"
2014	IETE Journal of Research, Vol. 60, no. 6, pp. 423-431	Rakesh Kumar, Indu Saini, "Empirical Wavelet Transform Based ECG Signal Compression"
2014	Computers and Electrical Engineering, (Elsevier), Vol. 40, pp. 1774-1787	Indu Saini, Dilbag Singh, Arun Khosla, "Electrocardiogram Beat classification using Empirical mode Decomposition and Multiclass Directed Acyclic Graph Support Vector Machine"
2013	Journal of Advanced Research-Elsevier, Vol. 4, no. 4, pp. 331-344	Indu Saini, Dilbag Singh, Arun Khosla, "QRS Detection using K-Nearest neighbor algorithm (KNN) and evaluation on standard ECG databases"
2013	IETE Journal of Research, Vol. 59, no. 5, pp. 615-623	Indu Saini, Dilbag Singh, Arun Khosla, "P- and T-wave Delineation of ECG signal using Support Vector Machine"
2013	International Journal of Medical Engineering and Informatics, (Inderscience), Vol. 5, no. 1, pp. 85-101	Indu Saini, Dilbag Singh, Arun Khosla, "Detection of QRS-complex using K-Nearest Neighbor algorithm"
2013	International Journal of Bio-science and Bio-Technology, Vol. 5, no. 6, pp. 171-180	Srishti Sondele, Indu Saini, "Classification of Mammograms Using Bidimensional Empirical Mode Decomposition Based Features and Artificial Neural Network"
2012	International Journal of Medical Engineering and Informatics, Inderscience, Vol. 4, no. 3, pp. 299-324	Indu Saini, Dilbag Singh, Arun Khosla, "Support vector Machine based QRS-Detection- Evaluation on standard databases"

Conference Publications :

Year	Conference	Publication
2019	3rd International Conference on Trends in Electronics and Informatics (ICOEI 2019)	Mayank Kumar Singh, Indu Saini, Neetu Sood "Brain Computer Interface Based Smart Environment Control"
2019	3rd International Conference on Trends in Electronics and Informatics (ICOEI 2019)	Diksh Kumari, Indu Saini, Neetu Sood, "Detection of Heart rate through Speech Using Mel Frequency cepstrum coefficients"

2019	International Conference on Intelligent Computing and Control Systems (ICICCS 2019]	Rajat Chauhan, Neetu Sood, Indu Saini, "Galactic Swarm Optimization-PTS strategy to minimize PAPR in WP-OFDM system"
2018	2nd International Conference on Advanced Informatics for Computing Research (ICAICR-2018), 2018.	Anurag Kumar, Neetu Sood, Indu Saini, "Electrical Signal Analysis of Different Types of Oxygen Efficient Plants"
2018	IEEE International Conference on Advances in computing, communication control and networking (ICACCCN 2018), Galgotias College of Engineering & Technology	Norkit Lepcha, Barjinder Singh Saini, Indu Saini, "GLCM and PCA based Image Steganography using Chaos-based Encryption"
2018	International Conference on Secure Cyber Computing and Communications (ICSCCC-2018)	Neetika Soni, Indu Saini and Butta Singh, "Morphologically Robust Discrete Cosine Transform based Lossless ECG Compression with Access Control Quality"
2018	International Conference on Secure Cyber Computing and Communications (ICSCCC-2018)	6. Neha Gupta, Neetu Sood and Indu Saini, "Statistical Feature Based Comparison of EEG in Meditation for Various Wavelet"
2017	Proceedings on 2016 2nd International Conference on Next Generation Computing Technologies, NGCT 2016 7877404, pp. 137-143	Verma, T., Saini, I, "Age-related variation in EEG to music stimulation: A nonlinear analysis"
2016	IEEE International Conference on Wireless Communications, Signal Processing and Networking (WiSPNET),	D. Gurve, B. S. Saini and I. Saini, An improved lossless ECG data compression using ASCII character encoding
2014	2nd International Conference on Communication and Electronics Information (ICCEI 2014)	K. rawal and I. Saini, "Comparative Analysis of Measuring Heart Rate Variability during Phases of Menstrual cycle in young Healthy Women"
2014	41st International Congress on Electrocardiology (ICE-2014)	Indu Saini, Dilbag Singh, Arun Khosla, " Automated ECG Delineation using Machine Learning Algorithms"
2013	3rd International Conference on physics science and technology, Dec 29-30 2012, Hongkong	Barjinder Singh Saini, Ravi Raj, Indu Saini, Locally adaptive bilateral clustering for image denoising and sharpness enhancement
2013	40th International Congress on Electrocardiology (ICE-2013 Glasgow), University of Glasgow	Indu Saini, Vinod Kumar, Arun Khosla, "Feature Extraction of ECG Signal using Support Vector Machine"
2013	10th International Conference on Information Technology-New Generations (ITNG 2013), Las Vegas, Nevada, USA	Indu Saini, Dilbag Singh, Arun Khosla, "Delineation of ECG wave components using K-Nearest Neighbor (KNN) algorithm"
2012	International conference ICPST-2012	Sanju Kuril, Indu Saini, B. S. Saini, "Cloud Classification for Weather Information by Artificial Neural Network"
2012	International conference on ISAI-2011	Indu Saini, B S Saini, "Cardiac Arrhythmia Classification using Error Backpropagation Method"
2012	2nd International Conference on Biomedical Engineering and Assistive Technologies (BEATS-2012), NIT Jalandhar	Indu Saini, Dilbag Singh, Arun Khosla, "Characteristic Wave Detection in ECG Signal using Support Vector Machine (SVM)"

Book/Chapter Publications :

Type	Title	Publisher	Authors	ISBN/ISS N No.	Year
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Book Chapter	Fog Removal Algorithms for Real-Time Video Footage in Smart Cities for Safe Driving	IGI-Global	N Sood, I Saini, T Awasthi, MK Saini, P Bhorival, T Kaur	9781522580850	2019
Book Chapter	Electrocardiogram Beat Classification Using BAT-Optimized Fuzzy KNN Classifier	IGI-Global	Atul Kumar Verma, Indu Saini, Barjinder Singh Saini	9781522579526	2019
Book Chapter	Electrocardiogram Dynamic Interval Feature Extraction for Heartbeat Characterization	IGI-Global	Atul Kumar Verma, Indu Saini, Barjinder Singh Saini	9781522579526	2019
Book Chapter	Robust Steganography in Non-QRS Regions of 2D ECG for Securing Patients' Confidential Information in E-Healthcare Paradigm	IGI-Global	Neetika Soni, Indu Saini, Butta Singh	9781522579526	2019
Book Chapter	Analysis of HRV during the Menstrual Cycle and Postmenopause	IGI-Global	K Rawal, B S Saini and I Saini	9781522506607	2016
Book Chapter	Analysis of HRV during the Menstrual Cycle and Postmenopause	IGI Global	K Rawal, B S Saini and I Saini	2327-7033	2015

Research Projects :

Role	Project Type	Title	Funding Agency	From	To	Amount	Status	Co-Investigator
PI	R&D	Reconfigurable Computing Systems	MHRD	2005	2011	8.00lacs	complete	Dr Mamta Khosla
	R&D	Design and Development of Anti-Eve Teasing Device for Women Safety	MIETY	October, 2018	April, 2020	15.00 lacs	Ongoing	Dr Neetu Sood
PI	R&D	Modified Solar Power based vehicle for Physically challenged person	TEQIP-II NIT Jalandhar	2014	2015	19000	Completed	Dr Neetu Sood
PI	R&D	Generation of Electricity from BIOGAS with GPS leakage detection	TEQIP-II NIT Jalandhar	2014	2015	15000	Completed	-

Events Organized :

Category	Type	Title	Venue	From	To	Designation
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Workshop	National	Need for IPRs for Engineers and Researchers and new career opportunities in IPR	NIT Jalandhar	02-05-2015	02-05-2015	Coordinator
Self Financed STC	National	Electronics & Communication System Design Aspects	NIT Jalandhar	25-05-2015	29-05-2015	Coordinator
One-week Industrial-Institute-Interaction training program sponsored by TEQIP-II	National	Emerging Trends of Research in Electronics and Communication	NIT Jalandhar	01-12-2014	05-12-2014	Coordinator
Two weeks FDP/STTP	National	ICT for Computing & Signal Processing	CT Institute and NIT Jalandhar	03-06-2013	14-06-2013	Coordinator
2nd International Conference	International	International Conference on Biomedical Engineering and Assistive Technologies (BEATS-2012)	NIT Jalandhar	06-12-2012	07-12-2012	Member Organizing Team
1st International Conference	International	International Conference on Biomedical Engineering and Assistive Technologies (BEATS-2010)	NIT Jalandhar	17-12-2010	19-12-2010	Member Organizing Team

Professional Affiliations :

Designation	Organization
Member (Membership No. - M-1595363)	Institution of Engineers, Kolkata, India

PhD Supervised :

Scholar Name	Research Topic	Status	Year	Co-Supervisor
Kavya Sai	Plant Signalling	Ongoing	2018	Dr Neetu Sood
Ruchika Arora	Machine Learning Approaches in Medical Image/Signal Analysis	Ongoing	2018	Dr Neetu Sood
Kirti Singh	Biomedical Signal Processing	Ongoing	2018	Dr Neetu Sood
Atul Kumar Verma	ECG Signal Analysis and Characterization	Ongoing	2015	Dr B S saini
Nitika Soni	Stegnography and Compression Techniques for ECG Signal	Ongoing	2014	Dr Butta Singh (GNDU ASR)

Admin. Responsibilities :

Position Held	Organization	From	To
Warden	Girls Hostel	May 2003	April 2007

Member	Women Cell	May 2013	Jauary 2015
Faculty in-charge	Women Cell	Feb'2015-	May'16

Award and Honours :

Title	Activity	Given by	Year
Distinguished Woman in Engineering	Academic Workshop	The Centre for Advanced Research and Design (CARD) of Venus International Foundation	2019