

## Curriculum Vitae

Name: Prof. Renu Cheema Vig

Email Address: [renuvig@pu.ac.in](mailto:renuvig@pu.ac.in)

Designation: Vice Chancellor, Panjab University from Jan 2023 onwards

Total Experience: More than 35 years

- **Administrative Experience**

1. **Dean University Instructions (DUI) Panjab University** Feb 2022 to March 2023
2. **Dean Research Panjab University** Feb, 2022
3. **Dean Faculty of Engineering and Technology from Feb 2011 to Jan 2012, Feb 2013 to Jan 2014, Feb 2015 to Jan 2016 and Feb 2017 to Jan 2018.**
4. **Director in UIET (University Institute of Engineering and Technology), Panjab University from Sept 2009 to Dec 2017**

- ❖ UIET received Rs. 10 crore under TEQIP-II project of MHRD for sub Component 1.1 i.e. Strengthening Institutions to improve Learning outcomes and Employability of Graduates. Since UIET was selected as a well performing institute, additional Grant of Rs. 5 crore was sanctioned by MHRD.
- ❖ Design Innovation Centre was set up by MHRD at Panjab University in 2015. UIET is the hub for DIC and PEC University of Technology, CSIO-CSIR and Institute of Dental Sciences are the Spokes. Under this project worth Rs. 10 Crore, initiatives were taken to promote design and innovation culture among students and faculty.
- ❖ UIET was selected for TEQIP Phase III under which it received Rs 7 Crore from MHRD

- **Academic Awards and Honors:**

- ❖ Awarded **Gold Medal** by Panjab University for standing first in B.E. across all departments in Punjab Engineering College and other affiliated colleges of PU
- ❖ Awarded Role of Honour for standing third in Pre-Engg. In Panjab University
- ❖ Awarded The N K Iyengar Memorial Prize for the paper Fuzzy Modelling for Ignition Timing Control in 2003
- ❖ Awarded The Corps of Engineers Prize for the paper Fuzzy Diagnostic System for Coronary Artery Disease in 2005
- ❖ **Appreciation letter from Dr M. P. Ravindra ,Vice President and Head, Education and Research Dept., Infosys Technologies Ltd for Sabbatical Project undertaken at Infosys Technologies Ltd in 2005**
- ❖ The Eminent Engineer Award by ETDB of The Institution of Engineers (India) ,2018

- **Patent published for “Distress signal based criminal activity detecting, preventing and reporting device, system and method”. Application no. E-2/686/2022/DEL,July 2022**

- **Post Doc/ PhD Guided:**
  - ❖ Guided 2 Post Doc and 13 PhD successfully in the area of Signal Processing and Fuzzy Logic based control
  - ❖ Supervising 3 PhD students
- **Research Publications:**
  - ❖ H Index:19/ SCI Indexed:40/ Scopus Indexed: 124/ Conference: 51
- **Member Committees**
  - ❖ Member of Selection committees of Research Institutes/ Universities
  - ❖ Member of NAAC accreditation and NBA accreditation committees
  - ❖ Member of NAAC Peer Team for Homi Bhabha National Institute, Mumbai.Evaluated Raja Ramanna Centre for Advanced Technology (RRCAT), Indore
  - ❖ Member Board of Management of Indira Gandhi Delhi Technological University for Women, Delhi.
- **Leadership Programs Attended:**
  - ❖ Building Excellence in Professional Higher Education Institution from Jan 19 to 21,2014 at ISB, Hyderabad.
  - ❖ Management Capacity Enhancement for Administrators from March 10-14, 2014 at IIM Lucknow (Noida Campus).
- **International Programs/Projects**
  - ❖ **Attended World Engineering Congress at Imperial College,London,2008**
  - ❖ **Attended Leadership Development Program at National University of Singapore,2015**
  - ❖ Member of first delegation of CRIKC that visited **University of Birmingham Nottingham University, UK** before signing MoUs with these Universities,2016
  - ❖ **Principal Investigator of project “Robust Automatic Segregation of Defective Fasteners in Industries using Deep Learning”, funded by Nottingham Trent University, UK from March 2021-July 2022**
- **Projects with Industry :**
  - ❖ Development of Indigenous Nut Sorting Machine for MSMEs.
  - ❖ Sabbatical Project on Enhancement of Testing Processes at Infosys Technologies Ltd,Mohali for 6 weeks
  - ❖ Project with M/s Phillips on improving testing board for Toaster produced by M/s Phillips.

- **Projects Undertaken**

- ❖ Consultancy project “Revolutionizing Colonic Histopathology using Artificial Intelligence” , M/s Amit Trehan LLC, USA
- ❖ Principal Investigator of UGC assisted Special Assistance Program in the area of Active Noise Control worth Rs 46 Lakhs in addition to salary of a Project Fellow for 5 years Under this project Semi anechoic chamber set up in UIET and projects undertaken in collaboration with NAL Bangalore.
- ❖ Co-investigator of the Project Development of Software Protection Tools sponsored by Department of Information Technology, GOI worth Rs14 lakhs

- **Workshop/STTP/Conference Organized/Attended:**

- ❖ Organised Workshop on Embedded System Design by Microsoft from July 11 to 14, 2006.
- ❖ **Organized Microsoft Academic Day on Feb 18, 2006**
- ❖ **Attended Campus Connect Conclave at Infosys Technologies Ltd, Mysore from Jan 19 to 21, 2006**
- ❖ Organized AICTE sponsored STTP on Enhancing Pedagogy with Modern Technologies, Feb 13-24, 2006
- ❖ Organized National Conference on Emerging Trends in Wireless Communication and E-Security, Jan 11-12, 2007
- ❖ Organized National Conference on Computing, Communication and Control, Oct 23-24, 2009

**PEER REVIEWED JOURNAL PUBLICATIONS  
ANNEXURE 1**

SCI Indexed Papers: 40/ Google Scholar Citations: 1576/ H Index:19					
S. No.	Date	Name of Journal	Title	Refereed Journal or not	Number of Citations
1	2022	Advanced Microscopy	Gaurav Sapra, Jaskaran Singh, Parveen Kumar, Manu Sharma, Renu Vig, "Effect of Carbon Nanotube Content on Mechanical Properties of MWCNT/Epoxy-Based Nanocomposite", pp. 245-247	Yes	
2	2021	Wireless Personal Communications, vol. 120, no. 2	Dutt, S., Agrawal, S., Vig, R. "Delay-Sensitive, Reliable, Energy-Efficient, Adaptive and Mobility-Aware (DREAM) Routing Protocol for WSNs", pp. 1675-1703	Yes	4
3	2021	Computer Science Review, vol. 39	Bhardwaj, A., Mangat, V., Vig, R., Halder, S., Conti, M., "Distributed denial of service attacks in cloud: State-of-the-art of scientific and commercial solutions", pp. 1-28	Yes	26
4	2021	Journal of Intelligent and Fuzzy Systems, vol. 40, no. 5	Singh, R., Rama Krishna, C., Sharma, R., Vig, R., "Energy efficient fixed-cluster architecture for wireless sensor networks", pp. 8727-8740	Yes	2
5	2020	IEEE Access, vol. 8	A. Bhardwaj, V. Mangat, and R. Vig, "Hyperband Tuned Deep Neural Network With Well Posed Stacked Sparse AutoEncoder for Detection of DDoS Attacks in Cloud," pp. 181916–181929	Yes	48
6	2020	Advances in Computational Techniques for Biomedical Image Analysis, Elsevier	G. Kaur, S. Singh, and R. Vig, "Medical image fusion framework for neuro brain analysis," pp. 57–69	Yes	12
7	2020	IET Image Processing, vol. 14, no. 9	A. M. Sharma, A. Dogra, B. Goyal, R. Vig, and S. Agrawal, "From pyramids to state-of-the-art: A study and comprehensive comparison of visible-infrared image fusion techniques," pp. 1671–1689	Yes	16
8	2020	Journal of Visual Communication and Image Representation, vol. 71	G. Joshi, S. Singh, and R. Vig, "Taguchi-TOPSIS based HOG parameter selection for complex background sign language recognition," pp. 1-22	Yes	17
9	2020	IET Image Processing, vol. 14, no. 4	G. Kaur, S. Singh, and R. Vig, "Medical fusion framework using discrete fractional wavelets and non-sampled directional filter banks," pp. 658–667	Yes	3
10	2019	International Journal of Sensors, Wireless Communications and Control, vol. 10, no. 2	S. Dutt, N. Shandil, S. Agrawal, and R. Vig, "Delay Aware and Lifetime Enhanced Sectoring (DALES) Routing Protocol for Heterogeneous Wireless Sensor Network," pp. 164–178	Yes	10
11	2019	Lecture Notes in Networks and Systems, vol. 46	S. Kumar, P. Kapur, and R. Vig, "Computational Technique for Onset of P-Wave for Seismic Alert System," in pp. 849–859	Yes	10
12	2019	IEEE Sensors Journal, vol. 19, no. 7	G. Sapra, M. Sharma, R. Vig, and S. Sharma, "Multiwalled Carbon Nanotube Film Composite for Active Vibration Control of Cantilevered Beam," pp. 2466–2473	Yes	9
13	2019	Journal of Electronic Materials, vol. 48, no. 6	G. Sapra, M. Sharma, R. Vig, and S. Sharma, "Temperature-Robust Active Vibration Controller Using MWCNT/Epoxy Strain Sensor and PZT-5H Actuator," pp. 3991–3999	Yes	9
14	2019	International Journal of Recent Technology and Engineering, vol. 7, no. 6	M. K. Sharma and R. Vig, "Vehicular traffic noise reduction using fuzzy logic based active noise control system," pp. 124–128	Yes	9
15	2019	Wireless Personal Communications, vol. 107, no. 4	S. Dutt, S. Agrawal, and R. Vig, "Impact of Variable Packet Length on the Performance of Heterogeneous Multimedia Wireless Sensor Networks," pp. 1849–1863	Yes	7
16	2019	LASER Focus World, vol. 55, no. 4	A. Dogra, A. M. Sharma, B. Goyal, S. Agrawal, and R. Vig, "Spatial-domain filtering techniques dictate low-light visible and IR image-fusion performance," pp. 32–35	Yes	
17	2019	International Journal of Informatics and Communication Technology, vol. 8, no. 3	A. S. Kang, E. V. Sharma, and P. R. Vig, "Performance analysis of CIC multirate filter in cognitive radio for efficient pulse shaping in wireless domain," pp. 184-192	Yes	

18	2019	International Journal of Recent Technology and Engineering, vol. 8, no. 3	G. Kaur, S. Singh, and R. Vig, "Multimodal image fusion in clinical research," pp. 5202–5211	Yes	
19	2019	International Journal of Recent Technology and Engineering, vol. 7, no. 6	S. N. Garg, R. Vig, and S. Gupta, "Analysis of different techniques for score level fusion in multimodal biometrics," pp. 1233–1238	Yes	1
20	2018	Wireless Personal Communications, vol. 100, no. 4	S. Dutt, S. Agrawal, and R. Vig, "Cluster-Head Restricted Energy Efficient Protocol (CREEP) for Routing in Heterogeneous Wireless Sensor Networks," pp. 1477–1497	Yes	70
21	2018	Journal of Materials Science: Materials in Electronics, vol. 29, no. 22	G. Sapra, P. Kumar, N. Kumar, R. Vig, and M. Sharma, "Effect of processing conditions on the electrical resistance of MWCNT/epoxy nanocomposite based strain sensors," pp. 19264–19277	Yes	8
22	2018	Archives of Acoustics, vol. 43, no. 2	M. K. Sharma, R. Vig, R. Pal, and V. Shantharam, "Quiet zone for the patient in an ambulance: Active noise control technology for siren noise reduction," pp. 275–281	Yes	5
23	2018	Journal of Computer Science, vol. 14, no. 10	A. Dogra, B. Goyal, S. Agrawal, A. M. Sharma, and R. Vig, "Concealed weapon detection using wavelet, dual tree complex wavelet transform and curvelet transform" pp. 1341-1350	Yes	
24	2018	IET Computer Vision, vol. 12, no. 5	G. Joshi, R. Vig, and S. Singh, "DCA-based unimodal feature-level fusion of orthogonal moments for Indian sign language dataset," pp. 570–577	Yes	
25	2018	Microsystem Technologies, vol. 24, no. 3	G. Sapra, M. Sharma, and R. Vig, "Active vibration control of a beam instrumented with MWCNT/epoxy nanocomposite sensor and PZT-5H actuator, robust to variations in temperature," pp. 1683–1694	Yes	
26	2018	Current Signal Transduction Therapy, vol. 13, no. 2	K. Veer and R. Vig, "Comparison of Surface Electromyogram Signal for Prosthetic Applications," pp. 168–172	Yes	
27	2018	Biomedical Technology, vol. 63, no. 2	K. Veer and R. Vig, "Identification and classification of upper limb motions using PCA," pp. 191–196	Yes	
28	2018	Knowledge Computing and Its Applications: Knowledge Manipulation and Processing Techniques, vol. 1, no. 1	Nidhi, V. Mangat, V. Gupta, and R. Vig, "Methods to investigate concept drift in big data streams," pp. 51–74	Yes	
29	2018	Journal of the Geological Society of India, vol. 92, no. 6	S. Kumar, R. Vig, and P. Kapur, "Development of Earthquake Event Detection Technique Based on STA/LTA Algorithm for Seismic Alert System," pp. 679–686	Yes	
30	2017	Imaging Science Journal, vol. 65, no. 3	B. Kaur, G. Joshi, and R. Vig, "Indian sign language recognition using Krawtchouk moment-based local features," pp. 171–179	Yes	20
31	2017	Telecommunication System, vol. 65, no. 4	A. S. Kang and R. Vig, "Performance analysis of FBMC-CR through optimization: tradeoff between various performance parameters in the cognitive radio environment," pp. 567–589	Yes	13
32	2017	Expert System, vol. 34, no. 6	K. Veer and R. Vig, "Analysis and recognition of operations using SEMG from upper arm muscles, pp. 1-7	Yes	6
33	2017	Performance Evaluation, vol. 13, no. 9	A. Kang, E. Sharma, and R. Vig, "Performance Evaluation of OFDM and Prototype FBMC-OQAM Cognitive Radio under constraints of variable Overlapping factors," pp. 71–91	Yes	
34	2017	Telkonnika (Telecommunication Comput. Electron. Control., vol. 15, no. 2	A. S. Kang and R. Vig, "Design and implementation of efficient analysis and synthesis QMF bank for multicarrier cognitive radio communication," pp. 636–645	Yes	
35	2017	International Journal of Advanced Science and Technology, vol. 107	A. S. Kang, E. V. Sharma, and R. Vig, "Performance Evaluation of Prototype FBMC Cognitive Radio under Constraints of L Number of Sensing Samples at Variable SNR for AWGN and Rayleigh Fading Environment," pp. 1-20	Yes	
36	2017	Wireless Personal Communications, vol. 95, no. 4	B. Kaur, G. Joshi, and R. Vig, "Identification of ISL Alphabets Using Discrete Orthogonal Moments," pp. 4823–4845	Yes	
37	2017	International Journal of Computer Science and Information, vol. 15, no. 1	S. N. Garg, R. Vig, and S. Gupta, "A Critical Study and Comparative Analysis of Multibiometric Systems using Iris and Fingerprints," pp. 549–557	Yes	

38	2017	International Journal of Control Theory and Applications, vol. 10, no. 6	S. N. Garg, R. Vig, and S. Gupta, "Performance Analysis of Uni-modal and Multimodal Biometric System," pp. 1-11	Yes	
39	2017	Indian Journal of Science and Technology, vol. 10, no. 44	S. Narula Garg, R. Vig, and R. Gupta, "A Survey on Different Levels of Fusion in Multimodal Biometrics," pp. 1-11	Yes	
40	2016	Mechanics Based Design of Structures and Machines, vol. 44, no. 4	S. Sharma, R. Vig, and N. Kumar, "Finite element modeling of smart piezo structure: considering dependence of piezoelectric coefficients on electric field," pp. 372-383	Yes	23
41	2016	International Journal of Applied Engineering Research, vol. 11, no. 8	N. Kaur, I. K. Aulakh, and R. Vig, "Analysis of spread spectrum techniques in cognitive radio networks," pp. 5641-5645	Yes	18
42	2016	Journal of Networks, vol. 10, no. 10	I. Kaur Aulakh and R. Vig, "Secondary User Aggressiveness Optimization in Sensing-Transmission Scheduling for Cognitive Radio Networks," pp. 543-562	Yes	7
43	2016	The Computer Journal, vol. 59, no. 10	A. S. Kang and R. Vig, "Comparative performance evaluation of modified prototype filter bank multicarrier cognitive radio under constraints of $L_p$ , $K$ , $N$ and $D$ ," pp. 1479-1491	Yes	6
44	2016	International Journal of Advanced Computer, vol. 7, no. 1	A. S. Kang, R. Vig, J. Singh, and J. Paul, "Comparative Analysis of Energy Detection Spectrum Sensing of Cognitive Radio Under Wireless Environment Using SEAMCAT," pp. 493-498	Yes	5
45	2016	Indonesian Journal of Electrical Engineering and Informatics, vol. 4, no. 3	A. S. Kang and R. Vig, "K Coverage Probability of 5G Wireless Cognitive Radio Network under Shadow Fading Effects," pp. 181-188	Yes	
46	2016	International Journal of Advanced Networking and Applications, vol. 8, no. 3	A. S. Kang and R. Vig, "Performance Analysis of Near Perfect Reconstruction Filter Bank in Cognitive Radio Environment," pp. 3070-3076	Yes	
47	2016	International Journal of Nanoscience, vol. 15, no. 5-6	G. Sapra, R. Vig, and M. Sharma, "Simulation and analysis of strain sensitivity of CNT-based strain sensors," pp. 1-6	Yes	
48	2016	International Journal of Systems, Control and Communications, vol. 7, no. 2	I. K. Aulakh and R. Vig, "Secondary user transmission protection optimisation in sensing-Transmission scheduling under varying channel noise in cognitive radio networks," pp. 97-115	Yes	
49	2016	Far East Journal of Electronics and Communications, vol. 16, no. 2	I. K. Aulakh, S. Singh, N. Kaur, and R. Vig, "Optimization of ber in cognitive radio networks using FHSS and energy-efficient obrmb spectrum sensing," pp. 297-324	Yes	
50	2016	Turkish Journal of Electrical Engineering and Computer Science, vol. 24, no. 5	N. Gautam, S. Sofat, and R. Vig, "Energy-efficient mobile cluster-head data collection model for wireless sensor networks," pp. 3448-3458	Yes	
51	2016	Journal of Medical Imaging and Health Informatics, vol. 6, no. 2	P. Aggarwal, R. Vig, and H. K. Sardana, "Lung cancer detection using fusion of medical knowledge and content based image retrieval for LIDC dataset," pp. 297-311	Yes	
52	2016	Journal of Intelligent Material Systems and Structures, vol. 27, no. 18	S. Sharma, R. Vig, and N. Kumar, "Temperature compensation in a smart structure by application of DC bias on piezoelectric patches," pp. 2524-2535	Yes	
53	2016	Ferroelectrics, vol. 502, no. 1	Y. Sukesha, R. Vig, and N. Kumar, "Variation of piezoelectric coefficient and permittivity of piezoactuator with electric field in AVC experiments," pp. 170-186	Yes	
54	2015	Wireless Personal Communications, vol. 82, no. 3	A. S. Kang and R. Vig, "Computer Aided BER Performance Analysis of FBMC Cognitive Radio for Physical Layer Under the Effect of Binary Symmetric Radio Fading Channel," pp. 1263-1278	Yes	16
55	2015	Integrated Ferroelectrics, 2015, vol. 167, no. 1	Sukesha, R. Vig, and N. Kumar, "Effect of Electric Field and Temperature on Dielectric Constant and Piezoelectric Coefficient of Piezoelectric Materials: A Review," pp. 154-175	Yes	16

56	2015	Invertis Journal of Science & Technology, vol. 8, no. 4	A. S. Kang and R. Vig, "Performance Analysis of the Effect of Sub Nyquist Sampling on Multi Rate Filter Bank Cognitive Radio," pp. 181–201	Yes	
57	2015	Universal Journal of Electrical and Electronic Engineering, vol. 3, no. 2	A. S. Kang and R. Vig, "Study of Different Performance Parameters of Prototype Filter for Filter Bank Multicarrier Cognitive Radio," pp. 31–38	Yes	
58	2015	Journal of Computer Science, vol. 11, no. 8	I. K. Aulakh and R. Vig, "Secondary user sensing time optimization in sensing-transmission scheduling for dynamic spectrum access in cognitive radio," pp. 880–891	Yes	
59	2015	Smart Structures and Systems, vol. 16, no. 6	S. Sharma, R. Vig, and N. Kumar, "Active vibration control: Considering effect of electric field on coefficients of PZT patches," pp. 1091–1105	Yes	
60	2015	Integrated Ferroelectrics, vol. 167, no. 1	Sukesha, R. Vig, and N. Kumar, "Effect of Electric Field and Temperature on Dielectric Constant and Piezoelectric Coefficient of Piezoelectric Materials: A Review," pp. 154–175	Yes	
61	2014	Expert Systems with Applications, vol. 41, no. 18	V. Mangat and R. Vig, "Novel associative classifier based on dynamic adaptive PSO: Application to determining candidates for thoracic surgery," pp. 8234–8244	Yes	38
62	2014	IETE Technical Review, vol. 31, no. 4	V. Mangat and R. Vig, "Dynamic PSO-based associative classifier for medical datasets," pp. 258–265	Yes	24
63	2014	Journal of Electrical and Electronic Systems, vol. 03, no. 01	A. S. K. Renu Vig, "Analysis of Effect of Variable Number of Subchannels on the Performance of Filter Bank Multicarrier Prototype Filter," pp. 1-11	Yes	
64	2014	Journal of Electrical and Electronic Systems, vol. 03, no. 03	A. S. Kang and R. Vig, "BER Performance Analysis of Filter Bank Multicarrier Using Sub band Processing for Physical Layer Cognitive Radio," pp. 1-10	Yes	
65	2014	International Journal of Computer Applications, vol. 93, no. 6	A. S. Kang and R. Vig, "Performance Analysis of Filter Bank Multicarrier Cognitive Radio for Physical Layer under Binary Symmetric Radio Fading Channel," pp. 27–32	Yes	
66	2014	Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering, vol. 129	N. Gautam, S. Sofat, and R. Vig, "An ant voronoi based clustering approach for wireless sensor networks," pp. 32–46	Yes	
67	2014	International Journal of Imaging and Robotics, vol. 12, no. 1	P. Aggarwal, H. K. Sardana, and R. Vig, "Classification of annotated pulmonary nodules with pathologically confirmed malignant, benign and metastasis cases," pp. 22–38	Yes	
68	2014	Current Medical Imaging, vol. 10, no. 3	P. Aggarwal, H. K. Sardana, and R. Vig, "Content Based Image Retrieval Approach in Creating an Effective Feature Index for Lung Nodule Detection with the Inclusion of Expert Knowledge and Proven Pathology," pp. 178–204	Yes	
69	2014	Journal of Computational Science, vol. 10, no. 4	V. Mangat and R. Vig, "An algorithm for mining usable rules using a holistic swarm based approach," pp. 585–592	Yes	
70	2014	Journal of Emerging Technologies in Web Intelligence, vol. 6, no. 3	V. Mangat and R. Vig, "Intelligent rule mining algorithm for classification over imbalanced data," pp. 373–379	Yes	
71	2013	Journal of Emerging Technologies in Web Intelligence, vol. 5, no. 1	M. Kumar and R. Vig, "Focused crawling based upon Tf-Idf semantics and hub score learning," pp. 70–77	Yes	14
72	2013	International Journal of Information and Management Sciences, vol. 24, no. 3	M. Kumar and R. Vig, "Hybrid Focused Crawling based upon VSM similarity, WordNet semantics and hub score learning," pp. 249–263	Yes	
73	2013	WASET International Journal of Computer Science and Telecommunications, vol. 4, no. 1	R. Verma, M. Dutta, and R. Vig, "FPGA Implementation of Modified Montgomery for RSA Cryptosystem," pp. 1351–1355	Yes	

74	2013	Journal of Emerging technologies in web intelligence, vol. 5, no. 1	M. Kumar and R. Vig, "Focused crawling based upon TF-IDF semantics and hub score learning," pp.70-77		
75	2013	Journal of Computers, vol. 8, no. 1	P. Aggarwal, R. Vig, and H. K. Sardana, "Patient-wise versus nodule-wise classification of annotated pulmonary nodules using pathologically confirmed cases," pp. 2245–2255	Yes	
76	2012	International Journal of Computer Applications, vol. 39, no. 15	J. Kaur, S. Agrawal, and R. Vig, "A Comparative Analysis of Thresholding and Edge Detection Segmentation Techniques," pp. 29–34	Yes	77
77	2012	Journal of Advances in Information Technology, vol. 3, no. 4	S. N. Bhadoria, P. Aggarwal, C. G. Dethé, and R. Vig, "Comparison of Segmentation Tools for Multiple Modalities in Medical Imaging," pp. 197–205	Yes	30
78	2012	International journal of engineering research and applications, vol. 2, no. 2	J. Kaur, "A Methodology for the Performance Analysis of Cluster Based Image Segmentation Sunil Agrawal," pp. 664–667	Yes	25
79	2012	International Journal of Image, Graphics and Signal Processing, vol. 4, no. 11	J. Kaur, S. Agrawal, and R. Vig, "Integration of Clustering, Optimization and Partial Differential Equation Method for Improved Image Segmentation," pp. 26–33	Yes	18
80	2012	International Journal of Computer Networks, vol. 4, no. 1	N. Gautam, S. Sofat, and R. Vig, "Data dissemination in wireless sensor networks: a state-of-the art survey" pp. 22–34	Yes	15
81	2012	J. Inst. Eng. Ser. B, vol. 93, no. 4	A. Monga and R. Vig, "An Ultra Miniature MEMS Capacitor for Arterial Pressure Measurement," pp. 271–275	Yes	
82	2012	International Journal of Computer Applications, vol. 43, no. 23	M. Kumar, "Learning Capable Focused Crawler for Information Technology Domain," pp. 1–4	Yes	
83	2011	International Journal of Computer Applications, vol. 29, no. 1	P. Aggarwal, R. Vig, S. Bhadoria, and A. C.G.Dethé, "Role of Segmentation in Medical Imaging: A Comparative Study," pp. 54–61	Yes	42
84	2011	Chemometrics and Intelligent Laboratory Systems, vol. 109, no. 1	A. P. Bhondekar, R. Kaur, R. Kumar, R. Vig, and P. Kapur, "A novel approach using Dynamic Social Impact Theory for optimization of impedance-Tongue (iTongue)," pp. 65–76	Yes	41
85	2011	IEEE Sensors Journal, vol. 11, no. 12	A. P. Bhondekar, R. Vig, A. Gulati, M. L. Singla, and P. Kapur, "Performance evaluation of a novel iTongue for Indian black tea discrimination," pp. 3462–3468	Yes	21
86	2011	Global Journal of Computer Science and Technology, vol. 11, no. 7	B. N. Kumar, R. Vig, and D. Bagai, "Up-Down Routing Based Deadlock Free Dynamic Reconfiguration in High Speed Local Area Networks," pp. 61-70	Yes	
87	2011	International Journal of Engineering, Science and Technology, vol. 3, no. 4	N. Kumar, R. Vig, and D. Bagai, "Improved Dynamic Reconfiguration in Distributed Switch-Based Interconnected Systems," pp. 2632–2641	Yes	
88	2011	International Journal of Computer Science & Engineering Technology, vol. 2, no. 3	N. Kumar, R. Vig, and D. Bagai, "Reconfiguring High Speed Networks," pp. 393- 401	Yes	
89	2010	Journal of Computers, vol. 5, no. 10	T. Tangkeshwar, P. K. Bansal, R. Vig, and B. Seema, "Recognition of handwritten character of Manipuri script," pp. 1570–1574	Yes	30
90	2010	Sensors and Actuators B: Chemical, vol. 148, no. 2	A. P. Bhondekar <i>et al.</i> , "A novel iTongue for Indian black tea discrimination," pp. 601–609	Yes	
91	2010	Journal of Advances in Information Technology, vol. 1, no. 1	M. Kumar and R. Vig, "Multilingual Context Ontology Rule Enhanced Focused Web Crawler," pp. 21–25	Yes	
92	2010	Journal of Computers, vol. 5, no. 10	N. Goyal, M. Kumar, and V. Renu, "Consistency enforcement using ontology on web," pp. 1520–1526	Yes	



93	2009	Pulse, vol. 1, no. 2	A. Kaur, R. Vig, and R. Bhatnagar, "Study of Different Measurement Systems and Design of Circuitry with Intensity Modulated measuring the," pp. 101–108	Yes	
94	2008	WSEAS Transactions on Computers, vol. 7, no. 8	R. Mahajan and R. Vig, "Performance and reliability analysis of new fault-tolerant advance omega network," pp. 1280–1290	Yes	16
95	2008	WSEAS Transactions on Computer Research, vol. 3, no. 5	R. Mahajan and R. Vig, "Reliability and performance analysis of new fault tolerant irregular network," pp. 311–321	Yes	
96	2008	Journal of Scientific and Industrial Research (India), vol. 67, no. 12	N. Jain and R. Vig, "Wavelet based vector quantization with treecode vectors for EMG signal compression," , pp. 1064–1071	Yes	
97	2006	WSEAS Transactions on Systems, vol. 5, no. 12	M. Dutta and R. Vig, "Analysis of speech compression using warped LPC and MLT-SPIHT algorithm," in pp. 2952–2960	Yes	
98	2005	WSEAS Transactions on Systems, vol. 4, no. 11	M. Dutta and R. Vig, "Speech compression with masked modulated lapped transform and SPIHT algorithm," pp. 2157–2162	Yes	
99	1993	Advanced Human Factors and Ergonomics, vol. 19	R. Vig, D. Bagai, and Y. C. Chopra, "Medical Diagnostic Expert Systems," pp. 3–5	Yes	

**CONFERENCE PUBLICATIONS (51)**  
**ANNEXURE 2**

1	A. Bhardwaj, A. Sharma, V. Mangat, K. Kumar, and R. Vig, "Experimental Analysis of DDoS Attacks on OpenStack Cloud Platform," in <i>Lecture Notes in Networks and Systems</i> , 2019, vol. 46, pp. 3–13
2	A. Bhardwaj, V. Mangat, and R. Vig, "Effective mitigation against IoTs using super materials for distributed denial of service attacks in cloud computing," <i>Material Today Proc</i> , 2020, vol. 28, pp. 1359–1362
3	A. M. Sharma, A. Dogra, B. Goyal, R. Vig, and S. Agrawal, "Low-light visible and infrared image fusion in nsst domain," in <i>Lecture Notes in Networks and Systems</i> , 2020, vol. 116, pp. 61–68
4	A. M. Sharma, R. Vig, A. Dogra, B. Goyal, and S. Agrawal, "A comparative analysis of transforms for infrared and visible image fusion," in <i>Advances in Intelligent Systems and Computing</i> , vol. 989, Springer, 2020, pp. 85–93
5	A. P. Bhondekar, R. Vig, M. L. Singla, C. Ghanshyam, and P. Kapur, "Genetic Algorithm Based Node Placement Methodology For Wireless Sensor Networks," in <i>Proceedings of the International MultiConference of Engineers and Computer Scientists</i> , 2009, vol. I, pp. 7-16
6	A. S. Kang and R. Vig, "Computational Complexity Analysis of FBMC-OQAM under different Strategic Conditions," in <i>2014 Recent Advances in Engineering and Computational Sciences</i> , 2014, pp. 1–6
7	A. S. Kang and R. Vig, "Study of Filter Bank Multicarrier Cognitive Radio under wireless fading channel," in <i>Souvenir of the 2014 IEEE International Advance Computing Conference</i> , 2014, pp. 209–214
8	B. Kaur, G. Joshi, and R. Vig, "Analysis of shape recognition capability of Krawtchouk moments," in <i>International Conference on Computing, Communication and Automation</i> , 2015, pp. 1085–1090,
9	B. Lalotra, R. Vig, and S. Budhiraja, "Multimodal medical image fusion using Butterworth high pass filter and Cross bilateral filter," in <i>MATEC Web of Conferences</i> , 2016, vol. 57, pp. 1021-1027
10	D. Handa and R. Vig, "Distress Screaming vs Joyful Screaming: An Experimental Analysis on Both the High Pitch Acoustic Signals to Trace Differences and Similarities," in <i>Indo - Taiwan 2nd International Conference on Computing, Analytics and Networks</i> , 2020, pp. 190–193
11	D. Koundal, M. Kumar, and R. Vig, "Focused Crawler Based Upon Efficient URL Queue Prioritizing Algorithm," <i>IEEE Int. Adv. Comput. Conference</i> , 2009, pp.1697–1700
12	D. Singh, R. Vig, C. Madhu, and R. Kaur, "Comparison between the performance of trigate junctionless transistor and double-gate junctionless transistor with same device length," in <i>Advances in Intelligent Systems and Computing</i> , , Springer, vol. 624, 2018, pp. 991–997
13	G. Joshi, R. Vig, and S. Singh, "Analysis of zernike moment-based features for sign language recognition," in <i>Advances in Intelligent Systems and Computing</i> , , Springer, vol. 624, 2018, pp. 1335–1343
14	G. Joshi, R. Vig, and S. Singh, "CFS- InfoGain based combined shape-based feature vector for signer independent ISL database," in <i>Proceedings of the 6th International Conference on Pattern Recognition Applications and Methods</i> , 2017, vol. 2017, pp. 541–548

15	G. Kaur, S. Singh, and R. Vig, "Medical Fusion of CLAHE Images Using SWT and PCA for Brain Disease Analysis," in <i>Lecture Notes in Networks and Systems</i> , 2019, vol. 46, pp. 427–437
16	G. Sapra, J. Singh, M. Sharma, and R. Vig, "Dynamic strain measurements on a cantilevered beam using CNT based strain sensor," in <i>Proceedings of International Conference on Recent Trends in Mechanical and Materials Engineering</i> , 2020, vol. 2283, no. 1, pp. 020050-1–020050-8
17	I. K. Aulakh and R. Vig, "Optimization of secondary user access in cognitive radio networks," in <i>Recent Advances in Engineering and Computational Science</i> , 2014, pp. 1–6
18	I. K. Aulakh and R. Vig, "Optimization of SU's probability of false alarm for dynamic spectrum access in cognitive radio," in <i>International Conference on Computing for Sustainable Global Development</i> , 2014, pp. 710–715
19	J. kaur and R. Vig, "Performance analysis of clustering based image segmentation and optimization methods," <i>The Second International Conference on Computer Science, Engineering and Applications</i> , 2012, pp. 245–254
20	M. K. Sharma and R. Vig, "Server noise: Health hazard and its reduction using active noise control," in <i>Recent Advances in Engineering and Computational Sciences</i> , 2014, pp. 1–5
21	M. K. Sharma, R. Vig, and G. Sahib, "Effect of secondary path lengths on the performance of FxLMS and virtual sensing technique based ANC system," in <i>Lecture Notes in Electrical Engineering</i> , vol. 524, Springer, 2019, pp. 229–244
22	M. Kumar and R. Vig, "Design of CORE: Context Ontology Rule Enhanced focused web crawler," in <i>Proceedings of the International Conference on Advances in Computing, Communication and Control</i> , 2009, pp. 494–497
23	M. Kumar and R. Vig, "e-library content generation using WorldNet Tf-Idf semantics," in <i>Advances in Intelligent Systems and Computing</i> , 2013, vol. 199, pp. 221–227
24	M. Kumar and R. Vig, "Learnable Focused Meta Crawling Through Web," <i>Procedia Technolog</i> , vol. 6, pp. 606–611, 2012
25	M. Kumar and R. Vig, "Online library content generation using focused crawling based upon meta tags and Tf-Idf," in <i>Proceedings of International Symposium on Computational and Business Intelligence</i> , 2013, pp. 158-161
26	M. Kumar and R. Vig, "Term-frequency inverse-document frequency definition semantic (TIDS) based focused web crawler," in <i>Communications in Computer and Information Science</i> , 2012, vol. 270, no. PART II, pp. 31–36
27	M. Malhotra, I. K. Aulakh, and R. Vig, "A review on energy based spectrum sensing in Cognitive Radio Networks," in <i>International Conference on Futuristic Trends in Computational Analysis and Knowledge Management</i> , 2015, pp. 561–565

28	N. Gautam and R. Vig, "Energy efficient approach through clustering and data filtering in WSN," in <i>Proceedings of the International Conference on Advances in Computing, Communications and Informatics</i> , 2014, pp. 2142–2148
29	N. Gautam, S. Sofat, and R. Vig, "A new approach for data filtering in wireless sensor networks," in <i>Lecture Notes in Electrical Engineering</i> , 2014, vol. 299, pp. 177–187
30	N. Narang, M. K. Sharma, and R. Vig, "Active noise control using intrinsic mode function technique," in <i>Proceedings - 5th International Conference on Computational Intelligence and Communication Networks</i> , 2013, pp. 210–214
31	P. Aggarwal, H. K. Sardana, and R. Vig, "an Efficient Visualization and Segmentation of Lung Ct Scan Images for Early Diagnosis of Cancer," in <i>National Conference on Computational Instrumentation</i> , 2010, no. March, pp. 19–20.
32	P. Aggarwal, H. K. Sardana, and R. Vig, "Content-based medical image retrieval using patient's semantics with proven pathology for lung cancer diagnosis," <i>IET Conf. Publ.</i> , vol. 2013, no. 645, 2013, pp. 345–351
33	P. Aggarwal, H. K. Sardana, and R. Vig, "Correlation between biopsy confirmed cases and radiologist's annotations in the detection of lung nodules by expanding the diagnostic database using content based image retrieval," in <i>Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)</i> , 2013, vol. 8047, no. PART 1, pp. 531–538
34	P. Aggarwal, R. Vig, and H. K. Sardana, "Largest versus smallest nodules marked by different radiologists in chest CT scans for lung cancer detection," in <i>Lecture Notes in Engineering and Computer Science</i> , 2013, vol. 1, pp. 462–466
35	P. Aggarwal, R. Vig, and H. K. Sardana, "Performance evaluation of different query sets on expanded diagnosed dataset using content based image retrieval in the detection of lung nodules for lung cancer diagnosis," in <i>Proceedings of the 2013 International Conference on Image Processing, Computer Vision, and Pattern Recognition</i> , 2013, vol. 1, pp. 279–286
36	P. Aggarwal, R. Vig, and H. K. Sardana, "Semantic and content-based medical image retrieval for lung cancer diagnosis with the inclusion of expert knowledge and proven pathology," in <i>IEEE 2nd International Conference on Image Information Processing</i> , 2013, pp. 346–351
37	R. Garg and R. Vig, "An efficient montgomery multiplication algorithm and RSA cryptographic processor," in <i>Proceedings - International Conference on Computational Intelligence and Multimedia Applications</i> , 2008, vol. 2, pp. 188–195
38	R. Mahajan and R. Vig, "A new min: fault-tolerant advance omega network," in <i>Proceedings of the 12th WSEAS international conference on Computers</i> , 2008, pp. 763–768.
39	R. Verma, M. Dutta, and R. Vig, "Early-word-based montgomery modular multiplication algorithm," in <i>2nd International Conference on Signal Processing and Integrated Networks</i> , 2015, pp. 595–600

40	R. Verma, M. Dutta, and R. Vig, "FPGA implementation of RSA based on carry save Montgomery modular multiplication," in <i>International Conference on Computational Techniques in Information and Communication Technologies</i> , 2016, pp. 107–112
41	R. Verma, M. Dutta, and R. Vig, "RSA cryptosystem based on early word based montgomery modular multiplication," in <i>Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)</i> , vol. 10975, 2018, pp. 33–47
42	R. Vig and R. Tandon, "Performance Analysis of Elliptic Curve Cryptography on Reconfigurable Hardware," in <i>Lecture Notes in Engineering and Computer Science</i> , 2008, vol. 2170, no. 1, pp. 261–264.
43	S. N. Garg, R. Vig, and S. Gupta, "Analysis of decision level fusion in multimodal biometrics using Iris and fingerprint," <i>IET Conf. Publ.</i> , vol. 2016, no. CP739, pp. 15-32
44	S. N. Garg, R. Vig, and S. Gupta, "Feature selection using soft computing algorithms in biometrics," in <i>Proceedings of the International Conference on Inventive Systems and Control</i> , 2017, pp. 1–5
45	S. N. Garg, R. Vig, and S. Gupta, "Multimodal biometric system based on decision level fusion," in <i>International Conference on Signal Processing, Communication, Power and Embedded System</i> , 2017, pp. 753–758
46	Sheenu, G. Joshi, and R. Vig, "A multi-class hand gesture recognition in complex background using Sequential minimal Optimization," in <i>Proceedings of 2015 International Conference on Signal Processing, Computing and Control</i> , 2016, pp. 92–96
47	Sheenu, G. Joshi, and R. Vig, "Histograms of orientation gradient investigation for static hand gestures," in <i>International Conference on Computing, Communication and Automation</i> , 2015, pp. 1100–1103
48	Suksha, R. Vig, and N. Kumar, "Active vibration control of a cantilevered plate instrumented with piezoelectric patches: Robust to variations in electric field," in <i>Recent Advances in Engineering and Computational Sciences</i> , 2014, pp. 1–5
49	V. Mangat and R. Vig, "Investigating role of interestingness measures in rule mining by embedding in novel soft computing method," in <i>Recent Advances in Engineering and Computational Sciences</i> , 2014, pp. 1–6
50	V. Mangat and R. Vig, "HybridMiner: Effective Rule Mining based on a Hybrid Dynamic Swarm Method," in <i>Proceedings of the International Conference on Artificial Intelligence</i> , 2013, p. 1.-12
51	V. Varuna, R. Vig, and D. Kaur, "Geometrical distortion correction using enhanced feature extraction," in <i>11th International Conference on Industrial and Information Systems</i> , 2016, vol. 2018, pp. 304–311