


### Faculty Profile

Name	<b>Dr. Parvinder Kaur</b>			
Designation	<b>Assistant Professor</b>			
Pay Scale	<b>7<sup>th</sup> pay scale</b>			
Department	<b>Electronics and Communication Engineering</b>			
Qualification	<b>Ph.D, M.E, B.Tech.</b>			
Date of joining	Institute <b>23-04-2018</b>	Present Post <b>Assistant Professor</b>		
Experience ( <i>in years</i> )	Total <b>20.6 Years</b>	Teaching <b>20.6 Years</b>	Industry Nil	
Research Interests	<b>Soft Computing, Signal Processing, Nature Inspired Computing, Optimization Algorithms</b>			
Contact Details:	Email <b>pkaur@ccet.ac.in</b>		Mobile/Phone <b>8295688911</b>	
Research Publications <b>54</b>	International Journals <b>21</b>	National Journals <b>03</b>	International Conferences <b>13</b>	National Conferences <b>16</b>
	<b>Google Citations: 358, h-index :11</b>			
Books/Chapters Published	<b>02 (Workshop Proceedings)</b>			
Research Guidance	Ph. D.		Masters	<b>10</b>
Research Projects	Completed		Inprogress	-
Consultancy Projects	Completed		Inprogress	-
Seminar/Conference/STTPs	Attended	<b>70</b>	Organized	<b>20</b>
Professional Affiliations	<ul style="list-style-type: none"> <li>- <b>Life Member of Indian Society for Technical Education (ISTE), LM 48273</b></li> <li>- <b>Member of Soft Computing Research Society since 16th July 2021.</b></li> </ul>			
Awards/ Fellowships etc.	<ul style="list-style-type: none"> <li>• <b>Appreciation Certificate in recognition of outstanding contribution during session 2020-2021 in conducting ICT Training for the employees of Chandigarh Administration (UT Government).</b></li> </ul>			

	<ul style="list-style-type: none"> <li>• Received 7th Venus International Women Awards – VIWA 2022 under category Outstanding Woman Researcher in Soft Computing.</li> <li>• Selected as subject expert member in AICTE Student learning and Assessment Project (ASLAP) to understand level and gains of students studying in Technical Institutions of India.</li> <li>• <b>“Sir Thomas Ward Memorial Subject Award”</b> for the paper titled, “Fuzzy rulebase generation from numerical data using Biogeography Based Optimization”, by The Institution of Engineers (India) Calcutta, presented in 25<sup>th</sup> Indian Engineering Congress held in Kochi, Kerla, India on 17<sup>th</sup> Dec 2010.</li> <li>• <b>“Best Paper Award”</b> for the paper titled, “Fuzzy System Identification: A Firefly Optimization Approach” by the International Academy of Science, Engineering and Technology in Nov. 2014.</li> </ul>
List of Publications	<p><b>RESEARCH PUBLICATIONS: 54</b></p> <ul style="list-style-type: none"> <li>• <b>Google Citations: 358, h-index :11</b></li> <li>• <b>International Journals (Peer reviewed/Refereed) : 21</b></li> <li>• <b>National Journals (Peer reviewed/Refereed) : 3</b></li> <li>• <b>International Conferences : 14</b></li> <li>• <b>National Conferences/Workshops : 16</b></li> </ul> <p><b>International Journals: Published – 21 (Peer reviewed/Refereed)</b></p> <ol style="list-style-type: none"> <li>1. Parvinder Kaur, Shakti Kumar and Amarpartap Singh, “Fractional Fourier and Cosine Transforms in Image Compression,” International Journal of Information Technology and Knowledge Management (IJITKM), Vol.1, No.1, pp. 139-145, June 2008. <i>ISSN: 0973-4414, Impact factor: 0.48.</i></li> <li>2. S. Bansal, S. Kumar, H. Sharma and P. Bhalla, “Golomb Ruler Sequences Optimization: A BBO Approach”, International Journal of Computer Science and Information Security (IJCSIS), Pittsburgh, PA, USA, Vol. 9, No. 5, pp. 63–71, May 2011, <i>ISSN 1947-5500. Impact factor: 0.423.</i></li> <li>3. P. Sandhu, S. Kumar, H. Sharma and P. Bhalla, “Evolving Fuzzy Classification Systems from Numerical Data”, International Journal of Computer Science and Information Security (IJCSIS), Pittsburgh, PA, USA, Vol. 9, No. 6, pp. 139–147, June 2011, <i>ISSN 1947-5500. Impact factor: 0.423.</i></li> <li>4. Parvinder Kaur, Shakti Kumar, Amarpartap Singh, “Optimization of Membership Functions Based on Ant Colony Algorithm,” International Journal of Computer Science and Information Security (IJCSIS), Vol. 10, No. 4, pp. 38-45, April 2012. <i>ISSN: 1947-5500, Impact factor: 0.423. (IC Value: 5.50 – Computed by Index Copernicus).</i></li> <li>5. Shakti Kumar, Parvinder Kaur, and Amarpartap Singh, “Fuzzy Model Identification: A Firefly Optimization Approach,” International Journal of Computer Applications (IJCA), Vol. 58, No. 6, pp. 1-8, Nov. 2012. <i>ISSN: 0975-8887, Impact factor: 0.814.</i></li> <li>6. Himanshu Taneja and Parvinder Bhalla, “An Improved Version of LEACH: Three levels Hierarchical Clustering LEACH protocol (TLHCLP) for Homogeneous WSN,” International Journal of Advanced Research in</li> </ol>

Computer and Communication Engineering (IJARCCCE), Vol. 2, No. 9, Sep. 2013, pp. 3610-3615. ISSN: 2278-1021.

7. Neha and Parvinder Bhalla, "Compact Elliptical Function low pass filter with Defected Ground Pattern," International Journal of Engineering Research and Technology (IJERT), Vol. 2, Issue 10, October 2013, pp. 217-222, ISSN: 2278-0181.
8. Yogita Wadhwa, Baljit Kaur and Parvinder Bhalla, "FWM Crosstalk Suppression using Golomb Ruler Sequence Optimization," International Journal of Research in Electronics and Computer Engineering (IJRECE), Vol. 2 Issue 2, Apr-June 2014, pp. 25-31, ISSN: 2348-2281.
9. Yogita Wadhwa, Parvinder Kaur and Baljit Kaur, "Golomb Ruler Sequence Generation and Optimization using Modified Firefly Algorithm," SSRG International Journal of Electronics and Communication Engineering (SSRG-IJECE) – Vol. 5, July 2014, pp. 1-8, ISSN: 2348 – 8549.
10. Amandeep Sharma and Parvinder Kaur, "Secure and Energy-Efficient Collaborative Image Transmission over Wireless Sensor Networks," International Journal of Electronics & Communication Technology (IJECT), Vol. 5, Issue 3, July - Sept 2014, pp. 57-61, ISSN: 2230-7109.
11. Ayush Dogra and Parvinder Bhalla, "An efficient data level fusion of multimodal medical images by cross scale fusion rule," International Journal of Advanced Scientific and Technical Research, Issue 4 volume 5, Sep. – Oct. 2014, ISSN 2249-9954, pp. 215-221.
12. Shakti Kumar, Sukhbir Singh Walia & Parvinder Kaur, "Fuzzy System Identification: A Firefly Optimization Approach," International Journal of Electronics and Communication Engineering (IJECE) ISSN (P): 2278-9901; ISSN (E): 2278-991X, Vol. 3, Issue 6, Nov 2014, pp. 9-20. *Impact factor: 3.2029. (JCC) (IC Value: 3.0).*
13. Ayush Dogra and Parvinder Bhalla, "CT and MRI Brain Images Matching Using Ridgeness Correlation," Biomedical & Pharmacology Journal, ISSN: 0974-6242, Vol. 7(2), pp. 691-696, 2014. **(SCI indexed).**
14. Ayush Dogra and Parvinder Bhalla, "Image Sharpening By Gaussian And Butterworth High Pass Filter," Biomedical & Pharmacology Journal, ISSN: 0974-6242, Vol. 7(2), pp. 707-713, 2014. **(SCI indexed).**
15. Shakti Kumar, Parvinder Kaur, and Amarpartap Singh, "Nature Inspired Approaches for Identification of Optimized Fuzzy Model: A Comparative Study," International Journal of Multiple Valued Logic and Soft Computing (MVLSC), Vol. 25, No. 6, pp. 555-587, 2015. ISSN: 1542-3980, **SCI Indexed**, Impact factor: 1.01.
16. Amandeep Sharma and Parvinder Kaur, "Energy Efficient and Secure Image Communication over Wireless Network", International Journal of Science and Research (IJSR), Volume 5 Issue 9, September 2016, 781 – 784.
17. Neety Bansal, Parvinder Kaur, "A Survey on Soft Computing Based Approaches for Fuzzy Model Identification", International Journal of Soft Computing and Engineering, ISSN: 2231-2307, Volume- 7 Issue- 3, Page No. 9-13, July 2017.
18. Krishan Arora, Parvinder Kaur and Vikram Kumar Kamboj, "Problems and Solutions of Various Areas of Load Frequency Control of Power System", International Journal on Future Revolution in Computer Science & Communication Engineering Volume 4, Issue 3, ISSN: 2454-4248, pp. 280-285, March 2018.
19. Neety Bansal, Parvinder Kaur, "A Novel Approach to Fuzzy Model Identification based on Bat Algorithm", International Journal of Applied Metaheuristic Computing (**ESCI indexed/Scopus**) IJAMC, Vol. 10, Issue 2, 2019.
20. Research paper titled, "Nature Inspired Algorithms in Adaptive Filters used for Speech Enhancement: A Review" Journal of AZANIA, Volume 21, Issue

08, August-2021 in UGC-CARE (Group-II) Approved & SCOPUS Listed International Journal.

21. Published Research paper titled, "An open-source MP + CNN + BiLSTM model-based hybrid model for recognizing sign language on smartphones" International Journal of System Assurance Engineering and Management, Springer, May 2024 <https://doi.org/10.1007/s13198-024-02376-x>. (*SCI indexed*).

#### **National Journals: Published - 3 (Peer reviewed/Refereed)**

1. Shakti Kumar and Parvinder Bhalla, "Fuzzy Rule base Generation from Numerical Data using Ant Colony Optimization" MAIMT- Journal of IT & Management, Vol.1, No.1, May 2007, pp.33-47.
2. Shakti Kumar, Parvinder Kaur and Amarpartap Singh "Fuzzy Rulebase Generation from Numerical Data using Biogeography Based Optimization Approach," Journal of Institution of Engineers, IE (I) Journal-ET, Vol. 90, pp. 8-13, July 2009. *ISSN: 0251-1096*.
3. Shakti Kumar, Parvinder Kaur, Amarpartap Singh, "Fuzzy Rule base Generation from Numerical Data using Big Bang-Big Crunch Optimization," Journal of Institution of Engineers IE (I) Journal-ET, Vol. 91, pp. 18-25, Jan. 2011. *ISSN: 0251-1096*.

#### **Reviewed Proceedings of the International Conferences: Published – 14**

1. Parvinder Bhalla, Kulbir Singh and Rajiv Saxena, "A Fractional Fourier Transform in Image Compression", Asian Conference on Intelligent Systems and Networks (AISN-2006), Feb 24-25, 2006, Haryana Engineering College Jagadhri, Haryana, India, pp. 465-467.
2. Shakti Kumar, Parvinder Bhalla and Sharad Sharma, "Automatic Fuzzy Rule-base Generation for Intersystem Handover using Ant Colony Optimization Algorithm", International Conference on Intelligent Systems and Networks (IISN-2007), Feb 23-25, 2007, MAIMT, Jagadhri, Haryana, India, pp. 764-773.
3. Shakti Kumar and Parvinder Bhalla, "Redundancy Allocation of Series-Parallel Systems Using an Ant Colony Approach", 2<sup>nd</sup> International Conference on Intelligent Systems and Networks (ISN-2008), Feb 22-24, 2008, ISTK, Haryana, India, pp. 215-219.
4. Shakti Kumar and Parvinder Bhalla, "Fuzzy Rule base Generation: A Biogeography Based Optimization Approach", 3<sup>rd</sup> International Conference on Intelligent Systems and Networks (IISN-2009), Feb 14-16, 2009, ISTK, Haryana, India. pp. 425-428.
5. Shakti Kumar, Parvinder Kaur and Amarpartap Singh "Soft Computing Approaches to Fuzzy System Identification: A Survey", 3<sup>rd</sup> International Conference on Intelligent Systems and Networks (IISN-2009), Feb 14-16, 2009, ISTK, Jagadhri, Haryana, India, pp. 402-411.
6. Kulbir Singh, Navdeep Singh, Parvinder Kaur, Rajiv Saxena. Image Compression by Using Fractional Transforms. In ARTCom 2009, International Conference on Advances in Recent Technologies in Communication and Computing, Kottayam, Kerala, India, 27-28 October 2009. pp. 411-413, IEEE Computer Society, 2009.
7. Shakti Kumar, Parvinder Kaur, Amarpartap Singh, "Identification of Optimized Fuzzy Rule-Based Models Based on Ant Colony Algorithm," 4<sup>th</sup> International Multi Conference on Intelligent Systems and Nanotechnology (IISN-2010), Feb 26-28, 2010, ISTK, Jagadhri, Haryana, India, pp. 548-558.
8. Shakti Kumar, Parvinder Kaur, Amarpartap Singh, " Knowledge Extraction from Numerical Data for Mamdani Type Fuzzy System using Big Bang-Big Crunch Optimization," International Conference on Future Challenges in

Wireless Communication, Optical Communication and Networks, Institution of Engineers, The Federation of Engineering Institutions of South & Central Asia, Nov. 27-29, 2010, pp. 45-53.

9. Shakti Kumar, Parvinder Kaur, Amarpartap Singh, "Fuzzy Rule Base Generation: An Artificial Bee Colony (ABC) Approach," 5<sup>th</sup> International Multi Conference on Intelligent Systems, Sustainable, New and Renewable Energy Technology and Nanotechnology (IISN-2011), Feb 18-20, 2011, ISTK, Jagadhri, Haryana, pp. 262-270.
10. S. Bansal, S. Kumar, H. Sharma and P. Bhalla, "Generation of Golomb Ruler Sequences and Optimization Using Biogeography Based Optimization", 5<sup>th</sup> International Multi Conference on Intelligent Systems, Sustainable, New and Renewable Energy Technology and Nanotechnology (IISN-2011), Institute of Science and Technology Klawad, Haryana, India, pp. 282-288, February 18-20, 2011.
11. P. Sandhu, S. Kumar, H. Sharma and P. Bhalla, "Automatic Fuzzy Rule Base Generation from Numerical Data Using Wang and Mendel Approach", 5<sup>th</sup> International Multi Conference on Intelligent Systems, Sustainable, New and Renewable Energy Technology and Nanotechnology (IISN-2011), Institute of Science and Technology Klawad, Haryana, India, pp. 282-288, February 18-20, 2011. pp. GS-87-92
12. S. Kumar, S. Bansal and P. Bhalla, "Optimal Golomb Ruler Sequence Generation for FWM Crosstalk Elimination: A BB-BC Approach" 6<sup>th</sup> International Multi Conference on Intelligent Systems, Sustainable, New and Renewable Energy Technology and Nanotechnology (IISN-2012), Institute of Science and Technology Klawad, Haryana, India, pp. 255-262, March 16-18, 2012.
13. Published Research paper titled, "A New Approach to Fuzzy Model Identification based on Cuckoo Search Algorithm" with students of ECE Rahul Aneja, Tanuj Singh and Shubham in the International Conference of Undergraduate Students (ICUS 2021) held online during November 27-28, 2021 organized by Soft Computing Research Society.
14. P.Kaur et. Al , "AI Enhanced Emotion Recognition Through Galvanic Skin Response and ECG Analysis for improved Accuracy and Reliability" IEEE Scopus Publication Conference Proceedings, November 2024.

**Reviewed Proceedings of the National Conferences/Workshops:  
Published – 16**

1. Parvinder Bhalla, Kulbir Singh, Rajesh Khanna and Rajiv Saxena, "Performance of Discrete Fourier and Discrete Cosine transforms in Image compression", National Conference on Electronic Circuits and Communication Systems (ECCS-2004), Feb 23-24, 2004, TIET, Patiala, Punjab. pp. 210-212.
2. Parvinder Bhalla, Kulbir Singh, Rajesh Khanna and Rajiv Saxena, "A Review on Fractional Integral Transforms", National Conference on Electronic Circuits and Communication Systems (ECCS-2004), Feb 23-24, 2004, TIET, Patiala, Punjab. pp. 213-215.
3. Parvinder Bhalla, Kulbir Singh, Rajesh Khanna and Rajiv Saxena, "Parameters of Rectangular window in Fractional Fourier domain", 8<sup>th</sup> Punjab Science Congress at Punjabi University, Feb. 7-9, 2005, Patiala, Punjab. pp. 159-160.
4. Parvinder Bhalla and Kulbir Singh, "Analysis of Rectangular Window in Fractional Fourier Domain", 2<sup>nd</sup> National Conference on Intelligent Systems and Networks (ISN-2005), Feb 25-26, 2005, Haryana Engineering College Jagadhri, Haryana, INDIA. pp. 216-219.
5. Parvinder Bhalla and Sharad Sharma, "A Review of Digital Watermarking", National Conference on Recent Trends in Engineering and Applications of

	<p>Computational Techniques (REACT-2006), BGIET, Sangrur, Punjab. pp. 56-58.</p> <ol style="list-style-type: none"> <li>6. Shakti Kumar and Parvinder Bhalla, "Applications of Ant Colony Optimization : A Tutorial", Proceedings of one week Workshop on Applied Soft Computing (SOCO-2006), Haryana Engineering College, Jagadhri, Haryana, pp. 152-159.</li> <li>7. Parvinder Bhalla and Shakti Kumar, "Image Compression using Fractional Fourier Transform", National Conference on Communications &amp; Networking (NCCN'08), March 27-28, 2008, SLIET, Longowal, Punjab, pp. 136-139.</li> <li>8. Parvinder Kaur, Shakti Kumar and Amarpartap Singh, "Performance of Discrete Fractional Cosine Transform in Image Compression," National Conference on Communications &amp; Networking (NCCN'09), March 6-7, 2009, SLIET, pp. 133-136.</li> <li>9. Shakti Kumar, Parvinder Bhalla and Amarpartap Singh, "Fuzzy Rule base Generation Part II: A BBO Approach", Proceeding of the Workshop on Intelligent System Engineering (WISE 2010), ISTK, Haryana, India. July 26-30, 2010, pp. 83-91.</li> <li>10. Shakti Kumar, Parvinder Bhalla and Amarpartap Singh, "Fuzzy System Identification: An ACO Based Approach", Proceeding of the Workshop on Intelligent System Engineering (WISE 2010), ISTK, Haryana, India. July 26-30, 2010, pp. 93-105.</li> <li>11. Pardeep Sandhu and Parvinder Bhalla, "An Integrated Approach for Rule Base Generation from Numerical Data for Classification and Control Systems", National Conference on Communications &amp; Networking (NCCN'12), Feb 3-4, 2012, SLIET, Longowal, Punjab.</li> <li>12. Shonak Bansal, Shakti Kumar and Parvinder Bhalla, "A Novel Approach to WDM Channel Allocation: Big Bang – Big Crunch Optimization", In Proceedings of Zonal Seminar on Emerging Trends in Embedded System Technologies (ETECH-2013), IETE, Chandigarh, August 23-24, 2013, pp. 80-81.</li> <li>13. Himanshu Taneja and Parvinder Bhalla, "A Novel Proposed Energy Efficient Protocol for WSN", In Proceedings of Zonal Seminar on Emerging Trends in Embedded System Technologies (ETECH-2013), IETE, Chandigarh, August 23-24, 2013, pp. 72.</li> <li>14. Parvinder Kaur, "Fuzzy Model Identification: Some New Soft Computing Based Approaches", Proceedings of the Faculty Development Programme on Soft Computing and its Applications (SCA-2013), Chapter 4, pp. 1-52, Dec. 17-19, 2013, Surya World Institutions of Academic Excellence, Rajpura, Punjab.</li> <li>15. Parvinder Kaur, "A Firefly Optimization Approach to Fractional Fourier Transform Based Image Compression", In Proceedings of National Conference on Emerging Trends in Applications of Electronics and Communication Technology" (ETAECT-2014), M.M. University, Mullana, Jan. 15-16, 2014, pp. 530-535.</li> <li>16. Parvinder Kaur, Mritunjay "Plant Intelligence and Communication: A Survey" in 23rd Punjab Science Congress organized by SLIET, Longowal, Punjab from February 7-9, 2020.</li> </ol>
Research Project Detail	-
Patent Detail	<ol style="list-style-type: none"> <li>1. Patent Granted for "A Novel Dual Band Antenna for Wireless Body Area Network". F.No. 201911037562 dated 18th Sept. 2019 (Published on 27th Sept. 2019 journal no. 39/2019).</li> </ol>

	<p>2. Patent published for “Machine Learning-based Anisotropic Filtering Framework for Infrared and Visible Sensor Image”. Application No.202441023689 A dated 05/04/2024. The Patent Office Journal No. 14/2024 Dated 05/04/2024.</p> <p>3. Patent published for “Automated Detection of Cardiac Arrhythmia using Recurrent Neural Network”. Application No.202441050584 A dated 05/07/2024. The Patent Office Journal No. 27/2024 Dated 05/07/2024.</p>
Consultancy	-
Ph.D Scholars Name	-
Institute Responsibility	<ol style="list-style-type: none"> <li>1. Head Clubs, CCET</li> <li>2. Member of College Level Anti-Ragging Squads</li> <li>3. Member of Internal Complaint Committee regarding “Sexual Harassment of Women at work place (Prevention, Prohibition and Redressal) Act 2013”</li> <li>4. Social Media Coordinator for Institute Innovation Council (IIC Cell) at CCET, Degree Wing, Chandigarh.</li> <li>5. Committee member for the implementation of National Innovation and Startup Policy (NISP) at CCET (Degree Wing) Chandigarh.</li> <li>6. Contingent Incharge of CCET for PU Zonal Youth and Heritage Festival every year.</li> <li>7. Deputed as ICT Trainer for imparting training on “ICT Skills” to Group B, C and D employees of Chandigarh Administration as per the directions of DTE, Chandigarh Administration.</li> <li>8. Incharge Cultural/Stage hosting/Decoration Committee of APRATIM &amp; Orientation and Induction Training Programme &amp; IPD every year at CCET, Degree Wing, Chandigarh.</li> </ol>
Department Responsibility	<ol style="list-style-type: none"> <li>1. In-Charge Library Committee of ECE department.</li> <li>2. Member Purchase Committee of ECE department.</li> <li>3. Departmental Project Lab Incharge.</li> <li>4. Member of Research Advisory Committee (RAC) for Ph.D. student in ECE Department.</li> <li>5. Faculty Coordinator for all students’ technical Workshops/Seminars of ECE department.</li> <li>6. Member of Students Attendance Supervision Committee at department level.</li> <li>7. Departmental Magazine Incharge/Newsletter Incharge to publish departmental activities on semester basis.</li> <li>8. Departmental Coordinator for MHRD/AICTE and other government schemes.</li> </ol>
Any Other Information	-

Signature of faculty