

Savita Gupta

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Research Interests

Image Processing, Medical Image Analysis, Speckle Reduction, Machine Learning, Wavelet applications, Cognitive Enhancement, Biometric Security, Cognitive Radios

Education

- 2002 – 2007 Ph.D. Advisor : Prof S.C. Saxena & Prof R.C. Chauhan
Dissertation: Design of Speckle Reduction Techniques for Medical Ultrasound Images
Computer Science and Engineering. Panjab Technical University, Jalandhar.
- 1996 – 1998 Master of Engineering (CGPA:10/10, University rank 1)
Advisor : Dr Tarun Marhwal
M.E. Thesis: Development of Proxy Server for World Wide Web
Computer Science and Engineering. Thapar University, Patiala
- 1988 – 1992 Bachelor of Technology. (84.14%, University Rank 1)
Computer Science and Engineering. TITS, Bhiwani.

Employment

- Dec 2017 – Dec 2020 Director, UIET, Panjab University, Chandigarh.
- Dec 2008 – Present Professor, UIET, Panjab University, Chandigarh.
- Jan 2012 – Jan 2015 Head, Computer Science & Engg, UIET, Panjab University, Chandigarh.
- Dec 2008 – Jan 2012 Head, Information technology, UIET, Panjab University, Chandigarh.
- Mar 2007 – Dec 2008 Professor, Computer Science & Engg, SLIET, Longowal.
- Mar 1999 – Mar 2007 Reader, Computer Science & Engg, SLIET, Longowal.
- Aug 1992 – Mar 1999 Lecturer, Computer Science & Engg, SLIET, Longowal.
- July 1991 – Dec 1991 Management Trainee, CEERI, Pilani, Rajathan

Grants and Contracts

- Principal Investigator: Savita Gupta, Harmesh Kansal, Ajay Mittal, Ramesh Sahni, “Social Impact Assessment for acquisition of land for 4 Lanning of Jhajjar-Faraukh Nagar-Gurugram”, HSIDC, Oct 2019-March 2021, Rs 7,14,000.
- Principal Investigator: Savita Gupta. " Processing and Segmentation of Medical Ultrasound Images for Computer Aid Diagnosis, DST Fast Track Young Scientist Research Scheme, July 2009 – July 2012 : Rs. 11,00,000.
- Principal Investigator: Savita Gupta " Development of Content based medical image compression Techniques for Telemedicine". DST PURSE Grant, 2009 – 2012 : Rs 43,00,000.
- Co-Principal Investigator: Anurag Aggarwal Savita Gupta, “Design of Communication devices under computer software on speech synthesis & natural Language processing for visually handicapped users”, MHRD, TapTec Grant, 2003-2005, Rs. 7,00,000.
- Principal Investigator: Savita Gupta, “Modernization of Labs by providing LAN facility”, MHRD, MODROB Grant, 2000-2003, Rs. 10,00,000.
- Principal Investigator: Savita Gupta, “Modernization of Labs by providing LAN facility”, Ministry of Women and Child Development, 1998-1999, Rs. 8,00,000.

Publications

Editors

1. Deepika Koundal, Savita Gupta, “Advances in Computational Techniques for Biomedical Image Analysis : Methods and Applications”, 1st Edition, Academic Press, Elsevier, 28th May 2020, . ISBN 978-0128-200247, eBook ISBN 978-128-204115.

Books

1. **S. Gupta, L. Kaur and J. Singh, A systematic Approach to Software Engg.** Paragon International Publisher, 2009. (ISBN: 81-89253-84-0)
2. **S. Gupta, L. Kaur and J. Singh, A text books of Operating Systems.** Khanna Book Publisher, New Delhi, 2008. (ISBN :9788190744812)

Book Chapters

1. T. Kaur, B. S. Saini, and S. Gupta, "Optimized Multi Threshold Brain Tumor Image Segmentation Using Two Dimensional Minimum Cross Entropy Based on Co-occurrence Matrix," in Medical Imaging in Clinical Applications, Springer International Publishing, 2016, vol. 651, pp. 461–486.
2. Savita Gupta and Lakhwinder Kaur, "Wavelet despeckle filtering", in Handbook of Speckle Filtering and Tracking in Cardiovascular Ultrasound Imaging and Video, Published by IET , London , UK, January 2018, pp. 173-197.

Refereed Journal Articles

1. S. Gupta, R.C. Chauhan and S.C. Saxena, "A Wavelet Based Statistical Approach for Speckle Reduction in Medical Ultrasound Images", IEEE Journal of International Federation for Medical & Biological Engineering and Computing, vol. 42, no. 2, pp. 189-192, 2004. (Impact factor 1.07)
2. S. Gupta, R.C. Chauhan and S.C. Saxena, "Locally Adaptive Wavelet Domain Bayesian Processor for Denoising Medical Ultrasound Images using Speckle modeling based on Rayleigh Distribution", IEEE Proceedings on Vision, Image and Signal Processing, vol. 152, no. 1, pp. 129-135, 2005. (Impact factor 0.655)
3. S. Gupta, R.C. Chauhan and S.C. Saxena, "Robust Non-homomorphic approach for Speckle Reduction in Medical Ultrasound Images", IEEE Journal of International Federation for Medical & Biological Engineering and computing, vol. 43, no. 2, pp. 189-195, 2005. (Impact factor 1.028)
4. S. Gupta, R.C. Chauhan and S.C. Saxena, "Homomorphic wavelet thresholding technique for denoising medical ultrasound images", Taylor & Francis, International Journal of Medical Engineering and Technology (JMET), vol. 29, no. 5, pp. 208-214, 2005. (Impact factor 0.527)
5. L. Kaur, S. Gupta, R.C. Chauhan and S.C. Saxena, "Medical ultrasound image compression using joint optimization of thresholding quantization and best-basis selection of wavelet packets", Elsevier, Journal of Digital signal Processing, vol. 17, no. 1, pp. 189-198, 2007. (Impact factor 1.317)
6. S. Gupta, L. Kaur, R.C. Chauhan and S.C. Saxena, "A Versatile Technique for Visual Enhancement of Medical Ultrasound Images", Elsevier, Journal of Digital signal Processing, vol. 17, no. 1, pp. 542-560, May 2007. (Impact factor 1.317)
7. G. Jindal and S.Kansal, "Future Prospects and Technological Developments in CBIR" CSI-Adhayan", Journal of Computer Society of India, pp. 16-23, Jul-Sep 2008.
8. J. Singh, L. Kaur and S. Gupta, "Analysis of Intrusion Detection Tools for Wireless Local Area Networks", International Journal of Computer Science and Network Security, vol. 9, no. 7, pp. 168-177, July 2009. (IJCSNS companies Impact factor 1.140)
9. J. Singh, L. Kaur and S. Gupta, "Comparative study of Intrusion Detection Techniques for Wireless Local Area Networks", International Journal of Advanced in Communication Engineering, vol.1, no. 1, 2009. (ISSN: 0975-6094)

10. M. Singh, S. Singh and S. Gupta, "Comparative Analysis of Spatial Filters for Speckle reduction in Ultrasound Images", World Congress on Computer Science and Information, IEEE Computer Society, vol. 6, no. 1, pp. 228-232, 2009.
11. J. Singh, S. Gupta and L. Kaur, "A MAC Layer Based Defense Architecture for Reduction-of-Quality (RoQ) Attacks in Wireless LAN", International Journal of Computer Science and Information Security, vol. 7, no. 1, pp. 284-291, January 2010. (IJCSNS companies Impact factor 1.140)
12. J. Singh, S. Gupta and L. Kaur, "A Cross-Layer Based Intrusion Detection Technique for Wireless Networks", International Arab Journal of Information Technology, vol. 7, no. 3, 2010. (Impact factor 0.724)
13. J. Singh, L. Kaur and S. Gupta, "Taxonomy of Attacks in Wireless Local Area Networks", International Journal of Advance Research in Computer Engineering, vol. 4, no.1, May 2010. (ISSN: 1975-9339)
14. J. Singh, L. Kaur and S. Gupta, "Improving Performance of Anomaly Based Network Intrusion Detection System", International Journal of Scientific Computing, vol. 4, no. 1, June 2010. (Impact factor 1.707)
15. R. Kaur, L. Kaur and S. Gupta, "Enhanced K-Mean Clustering Algorithm for Liver Image Segmentation to Extract Cyst Region", IJCA Special Issue on Novel Aspects of Digital Imaging Applications, pp. 59-66, DIA 2011. (Impact factor 1.707)
16. G. Singh and S. Gupta, "DHT based Routing Protocols for MANETs: A Survey", International Journal of Mobile And Adhoc Network, vol. 2, no. 1, February, 2012. (ISSN (Print) 2249-202X)
17. A. Gupta, H.K. Verma and S. Gupta, "Technology and Research developments in carotid image registration", Elsevier, Journal of Biomedical Signal Processing and Control-Special Issue: Biomedical Image Restoration and Enhancement, vol. 7, no. 6, pp. 560-570, November 2012. (5 year impact factor 1.395)
18. Gagandeep, L. Kaur and S. Gupta, "Overview of Lung Nodule Detection techniques", International Journal of Computer Application, December 2012. (Impact factor 1.707)
19. Mandeep Singh, Sukhwinder Singh and Savita Gupta, "A New Quantitative Metric for Liver Classification from Ultrasound Images", International Journal of Computer and Electrical Engineering, Vol. 4, No. 4, August 2012.
20. Deepika Koundal, Savita Gupta and Sukhwinder Singh, "Computer-Aided Diagnosis of Thyroid Nodule: A Review" International Journal of Computer Science & Engineering Survey (IJCSES) Vol.3, No.4, pp. 67-83. ISSN: 0976-2760, 2012.
21. Singh, G., Gupta, S., & Singh, S. (2012). Performance evaluation of dht based multi-path routing protocol for manets. International Journal of Scientific and Research Publications, Vol. 2(6), 2012.
22. Kaur, Amandeep and Gupta, Savita (2012). Texture Classification based on Gabor Wavelets.. International Journal of Research in Computer Science, Vol. 2(4), pp.39-44.
23. Singh, Jatinder, Lakhwinder Kaur, and Savita Gupta. "A cross-layer based intrusion detection technique for wireless networks." International Arab Journal of Information and Technology. Vol.9(3) (2012):pp. 201-207.
24. Kaur, Avneet., Kaur, L., & Gupta, S. (2012). Image recognition using coefficient of correlation and structural similarity index in uncontrolled environment. International Journal of Computer Applications, 59(5).2012.

25. Mandeep Singh, Sukhwinder Singh and Savita Gupta, "An Adaptive speckle suppression filter based on local statistics and edge-map for ultrasound images", *Advanced Science Letters*, vol. 19, no. 8, pp. 2375-2379, 2013.
26. Deep, G., Kaur, L., & Gupta, S. (2013). Lung nodule segmentation in CT images using rotation invariant local binary pattern. *International Journal on Signal and Image Processing*, 4(1), 20.
27. Gupta, A., Verma, H. K., & Gupta, S. (2013). A hybrid framework for registration of carotid ultrasound images combining iconic and geometric features. *Medical & biological engineering & computing*, 51(9), 1043-1050.
28. Acharya, U. R., Sree, S. V., Swapna, G., Gupta, S., Molinari, F., Garberoglio, R., ... & Suri, J. S. (2013). Effect of complex wavelet transform filter on thyroid tumor classification in three-dimensional ultrasound. *Proceedings of the Institution of Mechanical Engineers, Part H: Journal of Engineering in Medicine*, 227(3), 284-292.
29. Mandeep Singh, Sukhwinder Singh and Savita Gupta. "An information fusion based method for liver classification using texture analysis of ultrasound images." *Information Fusion*, vol. 19, pp 91-96 (2014). Impact Factor –6.639
30. Acharya, U. R., Swapna, G., Sree, S. V., Molinari, F., Gupta, S., Bardales, R. H., ... & Suri, J. S. (2014). A review on ultrasound-based thyroid cancer tissue characterization and automated classification. *Technology in cancer research & treatment*, 13(4), 289-301.
31. Gupta, A., Verma, H. K., & Gupta, S. (2014). Hybrid Multimodal Registration of Carotid Magnetic Resonance and Ultrasound Images Using Free-Form Deformation. *Journal of Multimedia Theory and Application Vol.1*. 1-9.
32. Akshay Girdhar, Jaskarn Bhullar and Savita Gupta, "Weighted variance based scale adaptive threshold for despeckling of medical ultrasound images using curvelets," *Journal of Medical Imaging and Health Informatics*, vol. 5, no. 2, pp. 272-281, April 2015 (Impact factor-0.642).
33. Akshay Girdhar, Jaskarn Bhullar and Savita Gupta, "Non-homomorphic technique for despeckling of medical ultrasound images using curvelet thresholding," *Advanced Science Letters*, vol. 21, no. 1, pp. 107-111, February 2015 (Scopus Indexed, IF-1.253).
34. Kakamanshadi, Gholamreza & Gupta, Savita & Singh, Sukhwinder. (2015), "A Survey on Fault Tolerance Techniques in Wireless Sensor Networks", 10.1109/ICGCIoT.2015.7380451.
35. Gagan Deep, Lakhwinder Kaur and Savita Gupta, "Biomedical image indexing and retrieval descriptors: A comparative study", *Procedia Computer Science* 85 (2016) 954 – 961. (doi: 10.1016/j.procs.2016.05.287)
36. Gagan Deep, Lakhwinder Kaur and Savita Gupta, "Directional local ternary quantized extrema pattern: A new descriptor for biomedical image indexing and retrieval", *Engineering Science and Technology, an International Journal* 19 (2016) 1895–1909. (<http://dx.doi.org/10.1016/j.jestch.2016.05.006>)
37. Gagan Deep, Lakhwinder Kaur and Savita Gupta, "Local mesh ternary patterns: a new descriptor for MRI and CT biomedical image indexing and retrieval", *Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization*, 2016. (DOI: 10.1080/21681163.2016.1193447)

38. T. Kaur, B. S. Saini and S. Gupta, "A Joint intensity and edge magnitude based multilevel thresholding algorithm for the automatic segmentation of pathological MR brain images", *Neural Computing and Applications – Springer*, 2016, pp. 1-24, doi: 10.1007/s00521-016-2751-4, SCI, IF=2.505.
39. Deepika Koundal, Savita Gupta and Sukhwinder Singh, "Automated Delineation of Thyroid Nodules in Ultrasound Images using Spatial Neutrosophic Clustering and Level Sets", *Applied Soft Computing*, vol.40, pp.86–97, 2016. (ELSEVIER) (SCI indexed & IF: 3.222) DOI: 10.1016/j.asoc.2015.11.035 SCI, IF=3.907.
40. Deepika Koundal, Savita Gupta and Sukhwinder Singh, "Speckle reduction method for thyroid ultrasound images in neutrosophic domain", *IET Image Processing*, vol.10, no.2, pp.167-75, 2016. (SCI indexed & IF: 0.753) DOI: 10.1049/iet-ipr.2015.0231 SCI, IF=1.044.
41. Deepika Koundal, Savita Gupta and Sukhwinder Singh, "Nakagami-based total variation method for speckle reduction in thyroid ultrasound images", *Proceedings Institution of Mechanical Engineers Part H: Journal of Engineering in Medicine (SAGE)*, vol.230, no.2, pp. 97-110, 2016. DOI: 10.1177/0954411915621340 (SCI IF: 1.329)
42. Madan Lal, Lakhwinder Kaur, Savita Gupta, "Speckle Reduction with Edge Preservation in B-Scan Breast Ultrasound Images", *International Journal of Image, Graphics and Signal Processing*, Vol. 8, No. 9, pp. 60-68, 2016. (Published), Publishers: MECS. Indexing: IET Inspec.
43. T. Kaur, B. S. Saini and S. Gupta, "A novel feature selection method for brain tumor MR image classification based on the Fisher Criterion and Parameter Free Bat Optimization", *Neural Computing and Applications (S.I.: Data Pre-processing Methods for Signal and Image Classification) – Springer*, 2017, pp. 1-14, doi: 10.1007/s00521-017-2869-z, SCI, IF=2.505.
44. T. Kaur, B. S. Saini and S. Gupta, "Quantitative metric for MR brain tumor grade classification using sample space density measure of analytic intrinsic mode function representation", *IET- Image Processing*, 2017, vol. 11, no. 8, pp. 620-632, SCI, IF=1.044.
45. T. Kaur, B. S. Saini and S. Gupta, "A novel fully automatic multilevel thresholding technique based on optimized intuitionistic fuzzy sets and tsallis entropy for MR brain tumor image segmentation", *Australasian Journal of Physical and Engineering Sciences in Medicine – Springer*, 2017, pp. 1-18, doi: 10.1007/s13246-017-0609-4, SCI, IF=1.032
46. Sran, Paramveer & Gupta, Savita & Singh, Sukhwinder., "Recent Advances and Perspective of Studies on Visual Attention Models for ROI Extraction in Medical Images", *International Journal of Control Theory and Applications*. Vol. 9. pp. 145-149, 2017.
47. Garg, S. N., Vig, R., & Gupta, S. (2017). Performance Analysis of Uni-modal and Multimodal Biometric System. *International Journal of Control Theory and Applications*, 10 (6), 631-641.
48. Garg, S. N., Vig, R., & Gupta, S. (2017). A survey on different levels of fusion in multimodal biometrics. *Indian Journal of Science and Technology*, 10, 44.
49. Garg, S. N., Vig, R., & Gupta, S. (2017). A Critical Study and Comparative Analysis of Multibiometric Systems using Iris and Fingerprints. *International Journal of Computer Science and Information Security*, 15(1), 549.

50. Kamra, A., & Gupta, S. (2016). Automatic Age Estimation Through Human Face: A Survey. In International Conference on Electrical, Electronics, Engineering Trends, Communication, Optimization and Sciences (EEECOS).
51. Singh, R. P., Gupta, S., & Acharya, U. R. (2017). Segmentation of prostate contours for automated diagnosis using ultrasound images: A survey. *Journal of computational science*, 21, 223-231.
52. Lal, Madan, Lakhwinder Kaur, and Savita Gupta. "B-mode breast ultrasound image segmentation techniques: an investigation and comparative analysis." *International Journal of Computational Systems Engineering* 4, no. 2-3 (2018): 171-184.
53. Lal, Madan, Lakhwinder Kaur, and Savita Gupta. "Automatic segmentation of tumors in B-Mode breast ultrasound images using information gain based neutrosophic clustering." *Journal of X-ray science and technology Preprint* (2018): 1-17.
54. Madan Lal, Lakhwinder Kaur, Savita Gupta, 'Modified Spatial Neutrosophic clustering Technique for Boundary Extraction of Tumors in B-Mode Breast Ultrasound Images', *Journal of IET Image processing*, 2018. SCI, IF=1.401
55. Taranjit Kaur, Barjinder Singh Saini, and Savita Gupta. "A comparative study on Kapur's and Tsallis entropy for multilevel thresholding of MR images via particle swarm optimisation technique." *International Journal of Computational Systems Engineering* 4, no. 2-3 (2018): 156-164.
56. Deepika Koundal, Savita Gupta and Sukhwinder Singh, "Neutrosophic Based Nakagami Total Variation Method for Speckle Suppression in Thyroid Ultrasound Images." *IRBM* 39, no. 1 (2018): 43-53. SCI, IF – 0.897
57. Deepika Koundal, Savita Gupta and Sukhwinder Singh., "Computer aided thyroid nodule detection system using medical ultrasound images." *Biomedical Signal Processing and Control* 40 (2018): 117-130. SCI, IF – 2.783
58. Rashmi Vishraj, Savita Gupta, and Sukhwinder Singh. "Intuitionistic fuzzy domain level set method for automatic delineation of juxta-pleural pulmonary nodules in thoracic CT images." *Current Medical Imaging Reviews* 14, no. 2 (2018): 280-288. SCIE, IF –0.299
59. Deep, G., Kaur, L., & Gupta, S. (2018). Local quantized extrema quinary pattern: a new descriptor for biomedical image indexing and retrieval. *Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization*, 6(6), 687-703.
60. Deep, G., Kaur, L., & Gupta, S. (2018). Biomedical image retrieval using microscopic configuration with local structural information. *Sādhanā* 43, 20 (2018). <https://doi.org/10.1007/s12046-018-0783-4>
61. Kaur, T., Saini, B.S. & Gupta, S. A joint intensity and edge magnitude-based multilevel thresholding algorithm for the automatic segmentation of pathological MR brain images. *Neural Computing & Applications* 30, 1317–1340 (2018).
62. Jindal, A., Aggarwal, N. & Gupta, S. An Obstacle Detection Method for Visually Impaired Persons by Ground Plane Removal Using Speeded-Up Robust Features and Gray Level Co-Occurrence Matrix. *Pattern Recognition and Image Analysis*. 28, 288–300 (2018).

63. Mandeep Kaur and Savita Gupta, "A fusion framework based on fuzzy integrals for passive-blind image tamper detection." *Cluster Computing* 22, 11363–11378 (2019).
64. Kaur, T., Saini, B.S. & Gupta, S. An adaptive fuzzy K-nearest neighbor approach for MR brain tumor image classification using parameter free bat optimization algorithm. *Multimedia Tools with Application* 78, 21853–21890 (2019).
65. Kaur, T., Saini, B. S., & Gupta, S. (2018). An optimal spectroscopic feature fusion strategy for MR brain tumor classification using Fisher Criteria and Parameter-Free BAT optimization algorithm. *Biocybernetics and Biomedical Engineering*, 38(2), 409-424.
66. Gholamreza Kakamanshadi, Savita Gupta, Sukhwinder Singh (2019), "Fuzzy Informer Homed Routing Protocol for Wireless Sensor Network". *International Journal of Computer Networks & Communications (IJCNC)* Vol.11, No.4, July 2019.
67. Taranjit Kaur, Barjinder Singh Saini, and Savita Gupta.(2019) "Optimization Techniques for the Multilevel Thresholding of the Medical Images." In *Medical Data Security for Bioengineers*, pp. 166-184. IGI Global, 2019.
68. Jaskirat Singh., Sukhwinder Singh., Bir Singh Chavan., Savita Gupta., Priti Arun., Damanjeet Kaur., Navneet Kaur (2020), "Effect of Computerized Cognitive Remediation in Patients with Schizophrenia", *International Journal of Recent Technology and Engineering (IJRTE)*, Volume-8 Issue-6, 1083-1087. (Scopus)
69. Preeti Abrol., Savita Gupta, "Social spider foraging-based optimal resource management approach for future cloud". *Journal of Supercomputing* 76, 1880–1902 (2020).
70. Preeti Abrol., Savita Gupta, Sukhwinder Singh "A QoS Aware Resource Placement Approach Inspired on the Behavior of the Social Spider Mating Strategy in the Cloud Environment". *Wireless Personal Communication* 113, 2027–2065, (2020).
71. Paramveer Kaur Sran, Savita Gupta, Sukhwinder Singh. "Segmentation based image compression of brain magnetic resonance images using visual saliency" *Biomedical Signal Processing and Control*, 62: 102089, (2020).
72. M, Garg, Arora, A., Gupta, S. "An efficient feature selection method for offline signature biometrics" *International Journal on Emerging Technologies*, 2020.
73. Garg M, Arora A S and Gupta S. Multimodal Biometric Systems – A Roadmap to Improve Performance and Accuracy, *International Journal of Engineering Research & Technology (IJERT)*, 4 (15), 129-135.
74. Garg M, Arora A S and Gupta S. A review on Iris Biometrics as Evolving Technology, *International Journal of Control Theory & Applications*, 9(45), 121-131, 2017.
75. Garg M, Arora A S and Gupta S. An efficient feature selection method for offline signature biometrics, *International Journal on Emerging Technologies*, 11(2), 1061-1065, 2020.
76. Garg M, Arora A S and Gupta S. A Novel Feature Biometric Fusion Approach For Iris, Speech And Signature, *Computer Methods in Materials Science*, 20(2), 61-69, 2020.
77. Garg M, Arora A S and Gupta S. An Efficient Human Identification through Iris Recognition System, *Journal of Signal Processing Systems*. 2021, <https://doi.org/10.1007/s11265-021-01646-2>

78. G. Singla, S. Gupta, L. Kaur, "Recent trends on multicast and cognitive mobile ad-hoc networks" *Journal of Natural Remedies*, Vol. 21, No. 3(S1), (2020)
79. G. Singla, S. Gupta, L. Kaur, "Cognitive scheme for energy conservation during delays in MANETs" *International Journal of Future Generation Communication and Networking*, Vol. 13, No. 4, pp. 878 – 889, (2020).

Conference Papers

1. S. Gupta and R.C. Chauhan, "E-Commerce & Economy: A future Scenario", 13th Indian Engineering Congress, April 24-25, 1999.
2. R.C. Chauhan, S. Gupta, S. Singh and H. Kansal, "Design of a video Conferencing system for distance Education," 1st ISTE Convention, SHSLCIET, 9th September 1999.
3. S. Gupta, L. Kaur, and R. C. Chauhan, "Training and HRD" National Seminar on Human Values and HRD, SLIET Longowal, Nov. 1999.
4. Gupta, R. C. Chauhan, S. Singh and H. Kansal, "Creating Convenient and Friendly Environment for Education and Training of the Handicapped in Technical Education", National conference, QIP center, U.O.R, Roorkee, Roorkee, Dec.18-19, 1999.
5. S. Gupta, H.K. Kansal and R. C. Chauhan, "Developing a filtering proxy server for Network Security," World Congress-2000, Beijing, China, 2000.
6. S. Gupta, B. Singh, K. Chauhan and R. C. Chauhan, "An approach to network intrusion detection," International Conf. on Construction Industry, Disaster Management, and Environment Management: Challenges for Sustainable Development, Punjab, IE (I), Chandigarh, 18-20 Nov 2000.
7. S. Gupta, H.K. Kansal and R. C. Chauhan, "Design of a filtering proxy server for world wide web" National Conference on Data Communication (NCDC-2000), Computer Society of India (CSI), April 7-8, 2000, CSIO, Chandigarh, 2000.
8. S. Gupta, L. Kaur and R. C. Chauhan, "Fingerprint Recognition Technique for Biometric Systems" 16th National Convention of Indian Engineers at SLIET Longowal, March 10-11, 2001.
9. S. Gupta, L. Kaur and R. C. Chauhan, "Wavelet based Image Compression using Daubechies filters" NCC-2002, IIT Bombay, paper no. 99, Jan. 2002.
10. S. Gupta, L. Kaur and R. C. Chauhan, "Comparison of wavelet and wavelet Packet based Image compression Techniques" National Seminar on Challenges Ahead with IT (CAIT-2002) at SLIET, Longowal, Jan. 2002.
11. S. Gupta, L. Kaur, R.C. Chauhan and S. C. Saxena, "A Wavelet based statistical approach for speckle reduction in medical Ultrasound Images", Proc. of IEEE Conf, Tencon-2003, IISc, Bangalore.
12. L. Kaur, S. Gupta, R. C. Chauhan and S.C. Saxena, "Compression of Ultrasound images using Wavelet Transform and Vector Quantization," IEEE conf. on EMBS, JAPAN, 2003.
13. L. Kaur, S. Gupta, R. C. Chauhan and S. C. Saxena, "Compression of Natural Images Using Haar Wavelet Transform", National conference on Services through IT Enabled Systems, DRDE Gwalior, April 19-29, 2003.

14. S. Gupta, L. Kaur and R. C. Chauhan, "Image Denoising using Wavelet Thresholding" Indian Conference on Computer vision, Graphics and Image Processing (ICVGIP), Ahmedabad, India, 2003.
15. S. Gupta L. Kaur, R. C. Chauhan and S.C. Saxena, "Image Denoising Using Adaptive Thresholding in Wavelet domain", 4th EURASIP International Conference on Video / Image Processing and Multimedia Communications 2-5 July 2003, Zagreb, Croatia (IEEE sponsored).
16. S. Gupta, L. Kaur, R. C. Chauhan and S.C. Saxena, "Speckle Reduction in Medical Ultrasound Images via Maximum A Posteriori Estimation of Wavelet Coefficients using Rayleigh Model for Speckle", IEEE-ICPR Conf. on Pattern Recognition, UK, 2004.
17. S. Gupta, L. Kaur, R. C. Chauhan and S.C. Saxena, "A Spatially Adaptive Wavelet Thresholding Technique for Speckle Reduction in Medical Ultrasound Images based on Nakagami Speckle Model" IEEE-ICME conf. on Multimedia & Expo, Taiwan, 2004.
18. L. Kaur, S. Gupta, R. C. Chauhan and S.C. Saxena, "Compression of Medical Ultrasound Images using Wavelet transform and Modified SPIHT Zero-tree Algorithm", National Conf. cutting Edge Tech. in Elec. & Comm. SHSL-CIET, Longowal, 2004.
19. S. Gupta, L. Kaur, R. C. Chauhan and S.C. Saxena, "Adaptive Spatial Filtering of Medical Ultrasound Images" Proc. of National Conf. on Research and practices in IT (RPIT-2004), SHSL-CIET, Longowal, March 2004.
20. L. Kaur, S. Gupta, R. C. Chauhan and S.C. Saxena, "Wavelet Coding of Medical Ultrasound Images Using An Adaptive Uniform Threshold Scalar Quantizer Based on MDL Criterion", 8th World Multi-conference on Systemics, Cybernetics and Informatics (SCI 2004), Orlando, USA, in July 18-21, 2004.
21. L. Kaur, R. C. Chauhan and S.C. Saxena, "A Modified EZW Image Coder for Medical Ultrasound Images", CERA-2005, IIT Roorkee, pp. 210-216, Sept. 2005.
22. S. Gupta, L. Kaur, R. C. Chauhan and S.C. Saxena, "Despeckling Coherent images using Wavelets and Spatially Adaptive Thresholding based on Rayleigh Speckle Model", CERA-2005, IIT Roorkee, Sept. 2005.
23. P. Bharti, S. Gupta and R. Bhatia, "Comparative Analysis of Image Compression Techniques: A Case Study on Medical Images", International Conference on Advances in Recent Technologies in Communication and Computing, pp. 820-822, October 2009.
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Ph.D. Supervision

Jul'19 – present **Advisor, Sabrina**

Deep learning in Medical Image processing

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Image processing

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Design and Investigation of Localization Technique for Indoor Wireless Sensor Networks

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Development and Analysis of Computerized Training Framework for patients with Neurocognitive Deficits.

Oct'15 – Dec'18 **Co-Advisor, Madan Lal**

[Ph.D. Dissertation] Boundary extraction of tumor in B-Mode breast ultrasound images

Oct'15 – Feb'21 **Advisor, Mamta Garg**

[Ph.D. Dissertation] Studies in Multimodal Biometric Fusion of Iris, Speech and Signature

Oct'13 – present **Advisor, Gagan Singla**

Energy Aware framework for Cognitive Multicast Ad-hoc Network

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Visual attention based system for compression of medical images

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[Ph.D. Dissertation] Distributed fault tolerant system for wireless sensor networks

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Design of Multibiometric system for user authentication

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QoS Aware Automated provisioning and Middleware based Orchestration for Cloud Computing

Sep'12 – Dec'18 **Advisor, Mandeep Kaur**

[Ph.D. Dissertation] A Fusion Framework for Improving Accuracy of Image Forensic Techniques

Aug'11 – present **Advisor, Alka Jindal**

Jan'11 – Dec'16 **Advisor, Deepika Koundal**

[Ph.D. Dissertation] Automated system for delineation of thyroid nodules in ultrasound images

Oct'11 – Dec'17 **Advisor, Gagan Jindal**

[Ph.D. Dissertation]

Oct'10 – Dec'14 **Co-Advisor, Mandeep Singh**

[Ph.D. Dissertation] Processing and Analysis of Ultrasound Images for Tissue Characterization

Oct'09 – Jun'15 **Advisor, Akshay Girdhar**

[Ph.D. Dissertation] Investigation of pre-processing techniques for medical ultrasound images

Oct'08 – Dec'11 **Advisor, Jatinder Singh Bal**

[Ph.D. Dissertation]

Master's Supervision

Jul'14 – Jun'16 **Advisor, Anchal Kamra**

[Master's Thesis] Age Estimation Using Face Images

Jul'14 – Jun'16 **Advisor, Kanica Sachdev**

[Master's Thesis] Detection and Localization of Copy Move Forged Areas in Digital Images

Jul'15 – Jun'17 **Advisor, Jaskaranveer Kaur**

[Master's Thesis] Multi-Modal Medical Image Fusion

Jul'16 – Jun'18 **Advisor, Shivangi Sethi**

[Master's Thesis] Feature Optimization Technique for Blind Image Steganalysis

Jul'17 – Jun'19 **Advisor, Divisha Garg**

[Master's Thesis] Analysis of EEG Signals for The Classification of ADHD Subjects and Healthy Controls

Honors and Academic Achievements

- Honorary membership of American Neutrosophic society
- Honorary Dean of Maharaja Agrasen Institute of Technology (MAIT)
- DST Fasttrack grant for Young Scientist in Engineering Sciences awarded in July 2009
- DST Purse Grant 2010
- Editor, Elsevier Book on Advanced Computational Techniques for Biomedical Image Processing 2020