

Curriculum Vitae

Dr. KALPANA CHAUHAN
Ph.D. (Electrical Engineering)
Indian Institute of Technology (IIT) Roorkee



Academic Performance Indicators (API) Score: 86.3

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PROFESSIONAL EXPERIENCE (9 Year Plus)

Name Of The Organization	Designation	Period	Tasks
Central University of Haryana	Assistant Professor	Jan, 16 2020	Teaching
Galgotias College of Engineering and Technology, Greater Noida, India	Associate Professor	July 31, 2017 to Jan, 14 2020	Teaching and Research
SIRDA Group of Institutions Sundernagar, Himachal Pradesh, India	Assistant Professor (Dean Research)	January 2013- May 2017	Teaching and Research
Center for Electromechanics, University of Texas at Austin, USA	Visiting Scientist	July-2014 To October 2014	Research and Development
Indian Institute of Technology Roorkee, India	Ph.D. Scholar Cum Teaching Assistant	August 2009- January 2013	Teaching and Research

ACADEMIC QUALIFICATION

COURSE	DISCIPLINE	BOARD/UNIVERSITY	YEAR OF PASSING	CGPA* / %
Ph.D.	Electrical Engineering	IIT Roorkee	2014	8.2
M.Tech	Control and Instrumentation Engineering	N.I.T. Jalandhar	2009	8.55
B.Tech	Electrical and Electronics Engineering	COER Roorkee	2006	67.78%
12 th	PCM	U.P.Board Allahabad	2001	65%
10 th	PCMB	U.P.Board Allahabad	1999	73.83%

RESEARCH INTEREST

- Image Processing, Segmentation
- Echocardiographic image segmentation,
- Spatial enhancement
- Integration of Distributed Energy Resources,
- Monitoring and Control of Energy Storage System

SUBJECTs TAUGHT

- ❖ Power Electronics, EMFT, Switch gear and Protection, Power Transmission and Distribution,
- ❖ Digital Signal Processing, Basic Electrical Engineering,
- ❖ Circuit theory, Electromagnetics and Field Theory,
- ❖ Electrical Measurement and Measuring Instrumentation.

FELLOWSHIP/ AWARDS/GRANTS

1. Young Engineer Award (Electrical Engineering), The Institution of Engineers (India) 2018-19.
2. Awarded with Women of Science (WOS-A) Scheme, Department of Science and Technology, Government of India, 2018.
3. Best Paper Award on Paper entitled, "Segmentation of Mitral Regurgitant Jet using the Combination of Wavelet and Watershed Transformation," in 8th IEEE Colloquium on Signal Processing & Its Applications (CSPA 2012), held in Melaka Malaysia during 23 to 25 March 2012.
4. Best Paper Award on Paper entitled "Statistical Analysis of speckle noise reduction techniques for echocardiographic Images," International Conference on Methods and Models in Science and Technology (ICM2ST-11), held in Jaipur in Nov 2011.
5. MHRD Fellowship for Ph.D. research. 2009.
6. MHRD Fellowship for M. Tech research. 2007.
7. Graduate Aptitude Test in Engineering (GATE), 2007

Awards for my Students:

8. First Prize for "Design of Droop Control Based Real-Time Battery Management System for Automated DC Microgrid," IEEE IAS CMD Myron Zucker Undergraduate Student Design Contest 2019, Baltimore, Maryland, United States. (Cash Prize: \$1300+ Full funding to Attend IAS Annual Meeting in the USA)
9. Solar based Hybrid Cold Storage is funded by "The Institution of Engineers (India)" under the R & D grant in aid scheme.

COMPUTER SKILL

- ❖ MATLAB, RSCAD, RTDS
- ❖ LAB VIEW, SCADA, PLC
- ❖ C, C++

TRAINING

Name Of The Industry	Designation	Period	Nature Of Work
Bharat Heavy Electrical Limited, Haridwar, India	Trainee Engineer	May 16- June 29, 2005	CNC (Computer Numerical Controlled) Machine System

THESIS / DESIRTATION/ PROJECT

Title	Guide	Degree
Processing of Echocardiographic Images with Reference to Mitral Regurgitation	Prof. M. L Dewal	Ph.D.
Application of HMI in Process Control	Dr. Rajesh Singla	M.Tech
Designing of a EEG signal measurement Device	Dr. S. K. Pahuja	M.Tech
Designing of Two levels Electronic Security and Safety system	Dr. M. A. Ansari	B.Tech

MEMBERSHIP OF PROFESSIONAL SOCIETIES

- ❖ **Senior Member**, Institute of Electrical and Electronics Engineers (IEEE)
- ❖ **Senior Member**, Women in Engineering (WIE)
- ❖ **Senior Member**, Power and Energy Society (PES)
- ❖ **Senior Member**, Industry Applications Society (IAS)
- ❖ **Member**, Institute of Doctors, Engineers and Scientists (IDES)
- ❖ **Member**, International Association of Computer Science and Information Technology, Singapore.
- ❖ **Member**, International Association of Engineers (IAENG) Hong Kong.
- ❖ **Full Member**, Organization for Women in Science for the Developing World (OWSD)
- ❖ **Associate Member**, The Institution Engineers (India)

EDITOR / MEMBER OF REVIEW BOARD

- ❖ **Editorial Board Member**, International Journal of Cardiology and Cardiovascular Medicine.
- ❖ **Editor**, International Journal of Advanced Computer Science and Information Technology, Switzerland.
- ❖ **Member of Scientific Committee**, International Engineering and Natural Science Conference (IENSC2018), will take place on November 14-17, 2018 in Diyarbakir, Turkey.
- ❖ **Reviewer**, Journal of Elsevier.
- ❖ **Reviewer**, IEEE Transactions and Journals.
- ❖ **Reviewer**, Journals of Springer.

Short Term/Workshops Organised

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| 1. | Organized a Technical workshop cum Training on Robotics at SIRDA Group of Institutions Sundernagar, Himachal Pradesh in association with Eklayava Innovations, April 13-14, 2013. |
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Short Term/Workshops Attended

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| 1. | Short Term Course on “Optical Fibers: Potential and Applications through ICT” Conducted by NITTR Chandigarh, at Galgotias College of Engineering and Technology Greater Noida, Dec18, 2017 to Dec22, 2017. |
| 2. | QIP workshop on “Breathing Mechanics” organized by the Department of Mathematics under QIP program at IIT Roorkee, March 31, 2013 |
| 3. | QIP workshop on "Interaction of Academic-Industry on Mathematical Modeling," organized by the Department of Mathematics under QIP Program at IIT Roorkee, March 31, 2012. |
| 4. | NI-LabVIEW- Basics workshop held on 25 march 2012. |
| 5. | "Library oriented program and workshop on Scopus and science Direct" organized by the Mahatma Gandhi central Library, IIT Roorkee, February 27, 2012. |
| 6. | Workshop on " Web of Science (Science Citation Index) & SciFinder Scholar (Chemical Abstract))" Organized by Mahatma Gandhi central Library, IIT Roorkee, June 23, 2011. |
| 7. | Training Program on “Ultrasound Imaging, Processing and Clinical Applications" organized by Department of Electrical Engineering, IIT Roorkee, 2010 |

Patents

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| 1. | K. Chauhan, and R.K. Chauhan, System for echocardiography machines to find out jet area automatically for the mitral regurgitation severity evaluation, filed on November 22, 2018. (Filed and Published) (Application Number: 201811043976) |
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2.	K. Chauhan, and R.K. Chauhan, System design for echocardiography machines to find out the vena contracta width automatically for the mitral regurgitation assessment, filed on March 22, 2019. (Filed) (Application Number: 201911011079)
3.	R.K. Chauhan, and K. Chauhan, Energy management system for photovoltaic-battery based DC microgrid in buildings, filed on July 17, 2018. (Filed and Published) (Application Number: 201811026751)
4.	R.K. Chauhan, and K. Chauhan, Method and system for rechargeable battery monitoring in photovoltaic based microgrid system, filed on February 18, 2019. (Filed) (Application Number: 2019110062501)
Books	
1.	R.K. Chauhan, and K. Chauhan, "Distributed Energy Resources in Microgrids" Elsevier, August 01, 2019 (ISSN: 9780128177747)
2.	R.K. Chauhan, K. Chauhan, and S.N. Singh, "Microgrids for Rural Areas: Research and case studies" IET (In press)
3.	K. Chauhan and R.K. Chauhan, "Image Processing Methods for Automatic Diagnosis of Cardiac Diseases", Elsevier (In progress)
Publications in the International Journals	
1.	R.K. Chauhan, K. Chauhan , "Battery Monitoring and Control System for Photovoltaic based DC Microgrid", International Journal of Emerging Electric Power Systems, vol 20, no. 6. 2019
2.	R.K. Chauhan, K. Chauhan, B. R. Subrahmanyam, A. G. Singh, and M. M. Garg , "Distributed and Centralized Autonomous DC Microgrid for Residential Buildings: A Case Study," Journal of Building Engineering, Elsevier, vol. 27, pp. 1-6, January 2020 (SCI: Impact Factor 2.378)
3.	K. Chauhan, R. K. Chauhan , "Design and Development of Two Levels Electronic Security and Safety System for Buildings", International Journal of Electronic Security and Digital Forensics (Inderscience) (Scopus ESCI) (Accepted)
4.	R. K. Chauhan and K. Chauhan, "Building Automation System for Grid-Connected Home to Optimize Energy Consumption and Electricity Bill," <i>Journal of Building Engineering, Elsevier</i> , vol. 21, pp.409-420, January, 2019. https://doi.org/10.1016/j.jobe.2018.10.032 (ISSN:2352-7102) (SCI Index: Impact Factor 2.378)
5.	R. K. Chauhan, K. Chauhan, and Josep M Guerrero, "Controller design and voltage stability analysis of grid connected DC microgrid," <i>Journal of Renewable and Sustainable Energy</i> , vol.10, no.3, pp. 035101-10, April 2018. (ISSN:1941-7012) (SCI: Impact Factor 1.337)
6.	R. K. Chauhan and K. Chauhan, "Performance Analysis of Power Distribution Systems with Weakly Grid Connected Rural Homes in Indian," <i>Energy and Buildings, ELSEVIER</i> , vol. 172, pp. 307-316, Aug. 01, 2018. (SCI: Impact Factor 4.457)
7.	K. Chauhan and R. K. Chauhan, "Optimization of grid energy using demand and source side management for DC microgrid," <i>Journal of Renewable and Sustainable Energy</i> , vol. 9, no. 3, pp. 035101, 2017. (DOI: http://dx.doi.org/10.1063/1.4984619).(ISSN:1941-7012) (SCI: Impact Factor 1.34)
8.	K. Saini, M. L. Dewal, and M. K. Rohit, "A fast region-based active contour model for boundary detection of echocardiographic images," <i>Journal of Digital Imaging, Springer</i> , vol. 25, no. 2, pp.271-278, 2012. (ISSN: 0897-1889 (SCI: Impact Factor 2.572))
9.	M. L. Dewal, K. Saini, and M. K. Rohit, "Assessment of mitral regurgitation severity with intensity based region growing," <i>International Journal of Hybrid Information Technology (IJHIT)</i> , vol. 8, no. 6, pp. 45-56, 2015. ISSN:1738-9968, (Scopus Index).
10.	K. Saini, M. L. Dewal, and M. K. Rohit, "Detection of mitral regurgitation severity using color histogram," <i>International Journal of Research in Biomedicine and Biotechnology, URP Journals</i> , vol. 3, no. 2, pp.102-108, June 2013.

11.	K. Saini, M. L. Dewal, and M. K. Rohit, "A mathematical evaluation of mitral regurgitation severity with EROA," <i>International Journal of Cardiovascular and Cerebrovascular Disease</i> , vol. 1, no. 1, pp.10-14, 2013.
12.	K. Saini, M. L. Dewal, and M. K. Rohit, "Automatic detection of vena contracta width for the mitral regurgitation assessment," <i>International Journal of Computer Science and Management Research</i> , vol. 2, no. 5, pp. 2455–2460, May 2013. (Impact Factor 2.11) .
13.	K. Saini, M. L. Dewal, and M. K. Rohit "Level set based on new signed pressure force function for echocardiographic image segmentation," <i>International Journal of Innovation and Applied Studies</i> , vol. 3, no. 2, pp. 560-569, June 2013. (Impact Factor 3.9) .
14.	K. Saini, M. L. Dewal, and M. K. Rohit, "Automatic jet area detection during mitral regurgitation," <i>International Review on Computers and Software (IRECOS)</i> , Praise worthy Prize, vol.7 no. 6, pp. 2891-2898. ISSN: 1828-6003, (Index in ICI Journal Master List), (Scopus Index)
15.	K. Saini, M. L. Dewal, and M. K. Rohit, "Modified nonlinear complex diffusion filter (MNCDF)", <i>Journal of Echocardiography</i> , Springer, vol. 10, pp. 48-55, 2012. ISSN: 1349-0222 (Scopus Index) (ESCI)
16.	K. Saini, M. L. Dewal), and M. K. Rohit, "A modified hybrid filter for echocardiographic image noise removal," <i>International Journal of Signal Processing, Image Processing and Pattern Recognition</i> , pp. 61-72, vol. 5, no. 2, 2012. (ISSN: 2005-4254).
17.	K. Saini, M. L. Dewal, and M. K. Rohit, "Spatial enhancement and modified log transformation for echocardiographic images," <i>International Journal of Biomedical Engineering and Technology (IJBET)</i> , Inder Science Vol. 7, No. 4, pp. 327-338, 2011. (ISSN: 1752-6426), (Scopus Index) (ESCI)
18.	K. Saini, M. L. Dewal, and M. K. Rohit, "Ultrasound Imaging and Image Segmentation in the area of Ultrasound: A Review", <i>International Journal of Advanced Science and Technology</i> , vol. 24, pp. 41-59, 2010 (SCOPUS) .
19.	R. K. Chauhan, K. Saini, and M.L Dewal, "Deployment of electrical system by integration of solar, wind and power," <i>International Journal of Advanced Engineering & Applications (IJAEA)</i> , vol. 1, pp. 67-70, June 2010. (ISSN:0975-7791)
20.	K. Saini, and M. L. Dewal, "Designing of a virtual system with fingerprint security by considering many security threats", <i>International Journal of Computer Applications</i> , vol.3, no.2, pp.25-31, June 2010. (ISSN:0975-8887) (Impact Factor 0.814) .
21.	R. K. Chauhan, M. L. Dewal, and K. Saini, "Intelligent SCADA system," <i>International Journal on Power System Optimization and Control</i> , vol.2,no.1, pp.143-149, 2010.
Book Chapters	
22.	R. K. Chauhan, K. Chauhan, and S.N. Singh, "Overview of Microgrids for Rural Areas and Low Voltage Applications, Microgrids for Rural Areas: Research and case studies" IET, Ch-1, 2020. (ISBN: 978-1785619984)
23.	R. K. Chauhan, K. Chauhan, and S.N. Singh, "Conclusions and Future Scope, Microgrids for Rural Areas: Research and case studies", IET, Ch-18, 2020. (ISBN: 978-1785619984).
24.	K. Chauhan, R. K. Chauhan, and A. Saini, "Enhancement and De-Speckling of Echocardiographic Images, <i>Soft Computing Based Medical Image Analysis</i> , Elsevier, pp. 61-79, Jan 2018. (ISBN: 9780128130872)
25.	K. Chauhan, and R. K. Chauhan, "Boundary Detection of Echocardiographic Images during Mitral Regurgitation," <i>Recent Advances in Computer Vision: Theories and Applications</i> , Springer, PP. 281-303, December 2018. (ISBN 978-3-030-03000-1).
26.	R. K. Chauhan, and K. Chauhan, "Management of Renewable Energy Sources and Battery Bank for Power Losses Optimization," <i>Smart Power Distribution Systems: Control, Communication and Optimization</i> , Elsevier, Pages 299-320, October 2018. (ISBN: 9780128121542) https://doi.org/10.1016/B978-0-12-812154-2.00015-8

27.	R. K. Chauhan, and K. Chauhan, "Impact of Demand Side Management Scheme on PV and Battery Size in Autonomous Residential Building," <i>Decision Making Applications in Modern Power Systems</i> , Elsevier, Pages 389-410, 2019 (ISBN:9780128166260).
28.	F. H. Gandoman, N. Omar, A. Ahmadi, S. H. E. Abdel Aleem, and K. Chauhan, "Safety and Reliability Evaluation for Electric Vehicles in Modern Power System Networks," <i>Distributed Energy Resources in Microgrids</i> , Elsevier, Pages 380-404. June 2019.(ISBN: 9780128177754)
Publications in the Proceedings of the International Conferences	
29.	R.K. Chauhan, K. Chauhan A. Mehrotra, A. K. Agarwal, B. R. Subrahmanyam, A. G. Singh, D. Singh, "Design of Droop Control Based Real-Time Battery Management System for Automated DC Microgrid", IEEE international conference on contemporary computing and applications (ic3a 2020), India, will held on 5-7 Feb. 2020 AKTU, Lucknow, India (Accepted)
30.	S. Chatterjee, B.K. S. Roy, K. Chauhan, "Speedy Detection of Very High Resistance Faults", 4th IEEE International Conference on Computing Communication and Automation (ICCCA), Greater Noida, 14-15 Dec 2018.
31.	K. Chauhan, M. L. Dewal, R. K. Chauhan, M. K. Rohit, "Regurgitation area segmentation using the particle swarm optimization and multilevel threshold selection," in <i>Proc. 5th International Conference on Networking and Information Technology (ICNIT 2014)</i> , Singapore, 21-23 Nov. 2014.
32.	K. Saini, M. L. Dewal, and M. K. Rohit, "Statistical analysis of speckle noise reduction techniques for echocardiographic images," in <i>Proc. AIP International Conference on Methods and Models in Science and Technology (ICM2ST-11)</i> , vol. 1414, pp. 95-99, 19-20, Nov 2011. ISSN 978-0-7354-0991-0 (Best paper award).
33.	K. Saini, M. L. Dewal, and M.K. Rohit, "Comparitive study of edge detectors in case of echocardiographic images," in <i>Proc. AIP International Conference on Methods and Models in Science and Technology (ICM2ST-10)</i> , vol. 1324, no. 267, pp. 267-271, 10-12 Dec.2010.issn: 978-0735408791
34.	K. Saini, M. L. Dewal, and M. K. Rohit, "Segmentation of mitral regurgitant jet using the combination of wavelet and watershed transformation," in <i>Proc. IEEE 8th Colloquium on Signal Processing & Its Applications</i> , Melaka, Malaysia, pp.74-79, March 23-25, 2012, (Best paper Award).
35.	K. Saini, M. L. Dewal, and M. K. Rohit, "Role of transducers and signal processing in echocardiography and effect of instrument artifacts," in <i>Proc. International Conference on Biomedical Engineering and Assistive Technologies (BEATS)</i> , India, Dec. 17-19, 2010.
36.	K. Saini, M. L. Dewal, and M. K. Rohit, "Echocardiographic image segmentation with threshold operation," in <i>Proc. 4th International Confrencece on Advance Computing & Communication Technologies</i> , India, pp. 272-275, Oct 30, 2010.
37.	R. K. Chauhan, K. Saini, and M. L. Dewal, "Deployment of SCADA for ring main system based power supply," in <i>Proc. International Multi Conference on Intelligent Systems & Nanotechnology (IISN 2010)</i> , India, pp. 410-413, Feb. 26-28, 2010.
38.	K. Saini, R. K. Chauhan, and M. L. Dewal, "Analysis of fingerprints based on ridge structure," <i>International Multi Conference on Intelligent Systems & Nanotechnology (IISN 2010)</i> , India, pp. 201-203, Feb. 26-28, 2010.
39.	R. Singla, and K. Saini, "Application of fingerprint recognition in process control," in <i>Proc. IEEE 2nd International Congress on Image and Signal Processing</i> , China, pp-1-5, Oct 2009.
40.	R. K. Chauhan, M. L. Dewal, and K. Saini, "Utility of SCADA in power generation and distribution system," in <i>Proc. 3rd IEEE International Conference on Computer Science and Information Technology (ICCSIT)</i> , pp.648-652, Jul. 9-11, 2010.
Publications in the Proceedings of the National Conferences	
42.	R. Kumar, K. Saini, and M. L. Dewal, "Trends of SCADA in process control," in <i>Proc. National Conference on Recent Advances in Electrical and Electronics Engineering (RAEEE2009)</i> , NIT Hamirpur, India, pp. 327-329, Dec. 23-24, 2009.

43.	R. Kumar, M. L. Dewal, and K. Saini, "Implementation of an intelligent system in process control," in <i>Proc. National Conference on Trends in Instrumentation and Control Engineering (TICE-2009)</i> , Thapar University, Patiala, India, pp156-160, Oct. 28-29, 2009.
44.	K. Saini, R. Kumar, and M. L. Dewal, "Attacks on finger prints and designing of a virtual security system with consideration of these problems," in <i>Proc. National Conference on Trends in Instrumentation and Control Engineering (TICE-2009)</i> , Thapar University, Patiala, India, pp-23-27, Oct. 28-29 2009.

Thesis/ Projects Supervised

Name of Students	Project Title	UG/PG/ PhD	Year of Award
Manoj Saini	Integration of Electric Vehicle and Management in Microgrid (In Progress)	Ph.D.	-
Adeep Mahrotra, Ashish Agarwal, B. Ravi Subramanian, Avanish Gautam Singh, Divyansh Singh	Design of Droop Control Based Real-Time Battery Management System for Automated DC Microgrid. (First Prize: IEEE IAS CMD Myron Zucker Undergraduate Student Design Contest 2019)	UG	2019
Mohit Agarwal Pankaj Kumar Prithvi Raj Singh	Building Automation Using Aurdunio	UG	2019

EXTRA CURRICULAR ACTIVITIES

- ❖ Editor Department Magazine (Electrical Department, Galgotias College of Engineering and Technology Greater Noida)
- ❖ Editor of the conference proceedings for International Conference on "Advance Computing, Communication, Energy, Instrumentation and Robotics (ICAC2EIR18)" will be held during 23-24 March 2018 at Galgotias College of Engineering and Technology Greater Noida.
- ❖ NBA Coordinator.
- ❖ Faculty Advisor International Conference on "Advance Computing, Communication, Energy, Instrumentation and Robotics (ICAC2EIR18)
- ❖ President of PhD Research Scholars, Department of Electrical Engineering, IIT Roorkee (2010-2012)
- ❖ Secretary of MRC married hostel IIT Roorkee (2011-2012)
- ❖ Proctor for Girls Department of Control and Instrumentation NIT Jalandhar (2008-2009)

PERSONAL PROFILE

- ❖ Husband's Name : Dr. Rajeev Kumar Chauhan
- ❖ Father's Name : Mr. Tejpal Singh Saini
- ❖ Mother's Name : Lt. Mrs. Bala Saini
- ❖ Date of Birth : 11-10-1983
- ❖ Marital status : Married
- ❖ Languages known : English, Hindi
- ❖ Nationality : Indian
- ❖ Address (India) : Flat-201, T-6, NRI City, GH-1, Greater Noida-201308, India

Google Citations

Citation indices	All	Since 2015
Citations	175	122
h-index	6	5
i10-index	5	5

Place: Greater Noida

Date: January 04 , 2020

(Dr. Kalpana Chauhan)