










**Dr. Ajay Kumar Verma**  
**Associate Professor**

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**B.Tech (Electrical Engg.), M.Tech (Power Systems), PhD (Digital Image Processing)**

He is currently Head of the Electrical and Electronics Engg. Department. He is associate Dean (Research and Development) and Central Library President. Prior to this Dr. Verma has been the Assistant Dean (Academics) and Head of EC and EI departments. He obtained his B.Sc. (Engg.) in Electrical Engineering from Dayalbagh Educational Institute (DEI) and M.Tech. in Engg. Systems from same university. He was awarded with Gold Medals in both B.Sc. (Engg.) and M.Tech for securing first rank. He has been awarded with Ph.D. in Image processing in year 2014 from DEI. His area of research is wavelets and their applications in Signals and Image Processing. He is life member of ISTE, India. Dr. Verma has published more than 25 research papers in various international journals and conferences of repute. He is also Technical Program Committee member and reviewer of many reputed IEEE international conferences. He has given several expert lectures. Dr. Verma is associated with HITM since year 2002.

### **Area of Interest**

-  Image and Video Processing
-  Signal Processing
-  Wavelets
-  VLSI
-  MATLAB and Hardware Interfacing
-  Control Systems
-  Digital and Analog Electronics

## Experience

13.5 years of experience in teaching

## Skill sets & Expertise

Signals, Image and Video Processing, Wavelets

## Publications

### Research Publications

1. International Journals: 07
2. National Journals: 01
3. International Conferences: 15
4. National Conferences: 01
5. Books/ Books' Chapters: 01
6. Magazine Articles: 01
7. Others: 00

### Journals:

- ✚ C. Patvardhan, A. K. Verma and C. Vasantha Lakshmi, "A Comparative Analysis of Spread Spectrum Watermarking Technique in Wavelet Domain", Journal of Computer Science and Engineering (JCSE), U. K., Vol. 9, Issue 2, pp. 38-43, October 2011.
- ✚ C. Patvardhan, A. K. Verma and C. Vasantha Lakshmi, "A Robust Wavelet Packet Based Blind Digital Image Watermarking using HVS characteristics", International Journal of Computer Applications (IJCA), Foundation of Computer Science, New York, USA, Vol. 36(9), pp. 06-12, December 2011.
- ✚ Neema Verma, A. K. Verma, "Performance Analysis of Wavelet Thresholding Methods in Denoising of Audio Signals of Some Indian Musical Instruments", International Journal of Engineering Science and Technology (IJEST), Vol. 04, No. 05, pp. 2047-2052, May 2012.
- ✚ C. Patvardhan, A. K. Verma and C. Vasantha Lakshmi, "Robust Watermarking of Document and Graphics Images in Wavelet Domain" International Journal of Applied Information Systems (IJ AIS), Foundation of Computer Science, New York, USA, Vol. 2(8), pp. 21-27, June 2012.
- ✚ Neema Verma, A. K. Verma, "A Comparative Analysis for Wavelets and Threshold Estimation Selection for Denoising of Audio Signals of Some Indian Musical Instruments", International Journal of Advanced Research in Computer Science (IJARCS), Vol. 03, No. 03, pp. 536-540, June 2012.

- ✚ C. Patvardhan, A. K. Verma and C. V. Lakshmi, “Denoising of Document Images using Discrete Curvelet Transform for OCR Applications”, International Journal of Computer Applications (IJCA), Foundation of Computer Science, New York, USA, Vol. 55(10), pp. 20-27, October 2012.
- ✚ A.K. Verma, C. Patvardhan and C. Vasantha Lakshmi, “Comparative Performance Analysis of Wavelets in Color Image Watermarking using Spread Spectrum Technique”, DEI Journal of Science and Engineering Research (DEIJSER), Vol. 16, No 1 and 2, pp. 117-130, 2012.
- ✚ K. Verma, C. Patvardhan and C. V. Lakshmi, “Robust adaptive watermarking scheme based on image contents in Wavelet domain”, International Journal of Image, Graphics and Signal Processing (IJIGSP), Vol. 7, No. 2, pp. 48-55, 2015.

### **Conferences:**

- ✚ A.K. Verma, Neema Verma, “Wavelet Based Denoising of Audio Signals in Real Time”, proceeding of International Conference on Modeling of Engineering and Technological Problems (ICMETP), BMASEC, Agra, 14-16 January 2009.
- ✚ H. Siddiqi, A. K. Verma and Noor-e-Zahra, “Reservoir Flow Simulation by Wavelet Techniques”, Proceedings of International Conference on Mathematical Modelling (ICMM), Sultan Qaboos University, College of Science, Muscat, Oman, 23-26 Feb. 2009.
- ✚ A.H. Siddiqi, A. K. Verma, Noor-e-Zahra, Ashish Chandiok and A. Hasan, “Wavelet based Simulation of Reservoir Flow”, AIP (American Institute of Physics) Proceedings of International Conference on Modeling of Engineering and Technological Problems (ICMETP) and the 9<sup>th</sup> Biennial National Conference of Indian Society of Industrial and Applied Mathematics (ISIAM), Vol. 1146, pp. 284-300, 14-16 January 2009.
- ✚ Patvardhan, A. K. Verma and C. Vasantha Lakshmi, “Performance Analysis of wavelets in Spread Spectrum Watermarking Technique” proceedings of an International Conference on Issues and Challenges in Networking and Intelligence (ICNICT), pp. 275-280, ISBN: 978-93-81126-27-1, KIET, Ghaziabad, 2011.
- ✚ A.K. Verma, Neema Verma, "A Comparative Performance Analysis of Wavelets in Denoising of Speech Signals", IJCA Proceedings on National Conference on Advancement of Technologies-Information Systems and Computer Networks, ISCON, GLA Univ., Mathura, 03-04 March, 2012.

- ✚ K. Verma, C. Patvardhan and C. Vasantha Lakshmi, "Robust Color Image Watermarking Scheme using JFIF -YCbCr Color Space in Wavelet Domain", Proceedings of 6<sup>th</sup> Springer International Conference on Information Processing (ICIP-2012), Wireless Networks and Computational Intelligence Communications in Computer and Information Science (CCIS), Springer-Verlag, Volume 292, pp. 187-192, 08-10 August 2012.
- ✚ K. Verma, Nishant Goyal and C. Patvardhan, "Wavelet Based Robust Video Watermarking Using Spread Spectrum Technique", Proceedings of 4<sup>th</sup> IEEE International Conference on Computational Intelligence and Communication Networks (CICN-2012), IEEE, pp. 778-782, GLA Univ., Mathura, 3-5 Nov. 2012.
- ✚ Patvardhan, A. K. Verma and C. Vasantha Lakshmi, "Document Image Denoising and Binarization using Curvelet Transform for OCR Applications", Proceedings of 3<sup>rd</sup> IEEE Nirma University International Conference on Engineering (NUiCONE-2012), pp. 1-6, Nirma University, Ahmedabad, Gujrat, 06-08 Dec. 2012.
- ✚ Neema Verma, A. K. Verma, "Real Time Adaptive Denoising of Musical Signals in Wavelet Domain", Proceedings of 3<sup>rd</sup> IEEE Nirma University International Conference on Engineering (NUiCONE-2012), IEEE, Nirma University, Ahmedabad, Gujrat, 06-08 Dec. 2012.
- ✚ Patvardhan, A. K. Verma and C. Vasantha Lakshmi, "Document Image Binarization Using Wavelets For OCR Applications", Proceedings of the 8<sup>th</sup> ACM Indian Conference on Vision, Graphics and Image Processing (ICVGIP-2012), Article No. 60, 16-19 Dec. 2012.
- ✚ A.K. Verma, Mayank Singhal and C. Patvardhan, "Robust Temporal Video Watermarking Using YCbCr Color Space in Wavelet Domain", 3<sup>rd</sup> IEEE International Advance Computing Conference (IACC- 2013), pp. 1184-1189, 22-23 Feb, 2013.
- ✚ Swati Agarwal, A. K. Verma, Preetvanti Singh, " Content Based Image Retrieval using Discrete Wavelet Transform and Edge Histogram Descriptor", IEEE International Conference on Information Systems and Computer Networks (ISCON 2013), pp. 19-23, GLA Univ., Mathura, 09-10 March, 2013.
- ✚ Patvardhan, A. K. Verma and C. V. Lakshmi, "A Robust Content Based Image Retrieval Based On Multi-Resolution Wavelet Features and Edge Histogram", 2<sup>nd</sup> IEEE International Conference on Image Information Processing (ICIIP), pp. 447-452, Jaypee University of Information and Technology, Shimla, Dec. 9 - 11, 2013.

- ✚ Swati Agarwal, A. K. Verma, Nitin Dixit, “Content Based Image Retrieval using Color Edge Detection and Discrete Wavelet Transform” IEEE International Conference on Issues and Challenges in Intelligent Computing Techniques (ICICT), KIET, Ghaziabad, 07-08 February, 2014.
- ✚ V. Lakshmi, Sarika Singh, A. K. Verma and C. Patvardhan, “An OCR System for Telugu Document Images with Complex Backgrounds”, 4<sup>th</sup> IEEE International Advance Computing Conference (IACC), ITM Univ., Gurgaon, HR, 21-22 Feb., 2014.

### **Others:**

- ✚ An article on “Digital Clock in JAVA” in International magazine “Electronics for You (EFY)” in April, 2007 issue.
- ✚ Gunjan Bhatnagar, Neema Verma, A. K. Verma, “Private Institutions: Promoting Quality Education or Creating Gaps?” two days national seminar on “Teachers of the 21<sup>st</sup> Century: Challenges & Opportunities”, organized by Anand College of Education and National Council of Teacher Education (NCTE), 2-3 April-2011.

## **Other Achievements**

### **Awards and Honors –**

Awarded Gold Medals for securing highest marks in B.Sc. Engg.  
 Awarded Gold Medals for securing highest marks in M.Tech.

### **Memberships of Professional Societies –**

ISTE (Life Membership)

### **Certifications –**

#### **Workshops**

- Three days short-term training program organized by IIPC and department of Electrical Engineering, DEI, Faculty of Engineering, DayalBagh, Agra on “Modeling and Simulation of Systems”.
- Three days faculty development program organized by NITTR, Chandigarh, on “Teaching Learning Methodology”.
- One day faculty development program entitled “Future Challenges in Education & Teacher as Mentor” organized by ICFAI, Delhi.

- Three days short-term training program organized by IIPC and department of Electrical Engineering, DEI, Faculty of Engineering, Dayalbagh, Agra on “Digital Design using VERILOG”.
- Attended the International Software Competition (India Imagine Cup, 06) organized by Microsoft at hotel Jay-Pee Palace, Agra, UP.
- One day workshop on “MBTI Test for personality Assessment” held at HIMCS, Mathura, UP.
- Two days International Conference cum Workshop on “Nano Technology” held at Ansal Institute of Technology (AIT), Gurgaon, HR.
- Three days International Conference on “Nano & Quantum Computing” organized by Indo-US cell at DEI, Deemed University, Dayalbagh, Agra, UP.
- Three days’ workshop on “Feel Teacher (Facilitating Excellence in Effective Leadership) organized by AIMINSIGHT, College of Human Resource Development, Mangalore, Karnataka.
- Three days International Conference on “Modeling of Engineering and Technological Problems” (ICMETP) organized by ISIAM (India), ICTP (Italy) at BMAS Engineering College, Agra, UP.
- Two days HR symposium on “Transforming the Transformation (Meltdown)” organized by NHRD chapter (Agra) and BMAS Engineering College at BMAS, Agra, UP.
- One Day Workshop on “Human Values” organized by UPTU, Lucknow at BMAS Engg. College, Agra.
- Two days’ workshop on “PASW (Predictive Analytics Software formerly SPSS) organized by IBM, India at HIMCS, Mathura.
- One day workshop on “Vision 2020: Status of Engineering Education in India”, jointly organized by DEI, Dayalbagh and System Society of India.
- Three days Indo-German Workshop on “Engineering and Analysis of Evolutionary Algorithms (EAEA 2013)”, jointly organized by Dayalbagh University and Kiel University, Germany at faculty of Engg., Dayalbagh, Agra, Jan 18-20, 2013.
- Five days AICTE and MHRD sponsored training program on “Solid State Control of Electric Drives”, organized by NITTR, Chandigarh at HITM, Agra, Sept. 02- 06, 2013.
- Ten days workshop on “Signals and Systems”, organized by IIT-Kharagpur, National mission on Education through ICT, MHRD, govt. of India at HITM, Agra, 02-14 January, 2014.
- Ten days workshop on “Control Systems”, organized by IIT-Kharagpur, National mission on Education through ICT, MHRD, govt. of India at HITM, Agra, 02-12 Dec., 2014.

## Social Links

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