



(Dr. Shailendra Kumar)

**Associate Professor, Department of Computer Science & Engineering,
Faculty of Engineering,
Integral University, Lucknow**

(+91-9450976533, skumar@iul.ac.in, shail288@gmail.com)

PROFILE

Vision is to the upliftment of student's growth, through an effective teaching-learning process and quality research, to make them compete globally with sound technical, interpersonal, analytical and managerial skills with professional ethics.

RESEARCH INTEREST:

- Image Processing
- Solar Photovoltaic Technology

SUMMARY OF RESEARCH ACCOMPLISHMENT:

Efficient compression is required for mobile services because of various limitations like memory, bandwidth, and processing power. There are various techniques that exist for encoding three-dimensional video content for three-dimensional mobile Television are examined and compared. The presented technique includes a full right video and a sub-sampled left video sequence with the help of a variable cutoff frequency FIR filter including variable block sizes to improve coding efficiency and reduce broadcast rate and perform better speed of image filtering.

PROFESSIONAL MEMBERSHIP:

- Life membership of Solar Energy Society of India
- Life membership of Institution of Engineers India
- Life membership of Instrument Society of India
- IEEE Member

COURSE TAUGHT:

B. Tech

- Basic Electronics.
- Solid State Device & Circuit.
- Network Analysis.
- Signal & System
- Communication System.
- Digital Electronics.

- Digital Communication.
- Data Communication Networks.
- Digital image processing.

M. Tech

- VLSI Design.
- Semiconductor Device Modeling & Circuit Simulation.
- VLSI Devices and Circuits.

Ph.D

Digital Image Processing

M.Sc

- Digital Electronics
- Communication Electronics

BCA

- Data Compression
- Computer Organization

ADMINISTRATIVE/DEPARTMENTAL RESPONSIBILITY

- Worked as **Centre Controller** in UPTU SEE Entrance Exam 2008 at Allahabad.
- Worked as **Centre Controller** in UPTU SEE Entrance Exam 2009 at Kanpur.
- **Chairman** of the working committee of DQAC, Integral University from 2016 till date.
- Member of the working committee of **University NAAC Criteria-1**.
- Actively involved in **NBA** (Aug 2013) and **NAAC** (April 2014) visit preparations of the department.
- **Organizing secretary**, a Two-Weeks blended QIP workshop with 80+ hours of online active engagement (one-week equivalent) on Spreadsheet Applications in Academics and Administration: Intermediate Level Jointly Organized by Internal Quality Assurance (IQAC) & Human Resource Development Centre (HRDC), Integral University, Lucknow from June 25, 2021, to July 15, 2021.
- **Organizing secretary** in IEEE financed International Seminar MTES-17 at Integral University, Lucknow.
- **Organizing secretary** in IEEE financed International Symposium CCTES-17 at Integral University, Lucknow.
- **Co-organizing secretary** in IEEE financed International Seminar ISPSFPRES at Integral university, Lucknow.
- **Co-Organizing secretary** in IEEE financed National Conference ETNCER-16 at Integral University, Lucknow.
- **Coordinated** 23 days' workshop for 19th IIRS Outreach Programme on "Remote Sensing and GIS Applications in Carbon Forestry" Indian Institute of Remote Sensing, Indian Space Research Organization, Department of Space, Govt. of India, Dehradun, India at Integral University, Lucknow between 16022017 to 10032017.
- **Coordinator** M.Tech (ECS) in Integral University, Lucknow since 2011.

- **Coordinated** Two-Day National Workshop on Energy Conservation & Energy Audit (ECEA-2016) with IEEE Integral University Student Branch, Lucknow at Deptt. of ECE, Integral University, Lucknow on 26-02-2016.
- **Coordinated** One-Day National Workshop on Communication Engineering and Image processing (CEIP-2015) with IEEE Integral University Student Branch, Lucknow at Deptt. of ECE, Integral University, Lucknow on 17-10-2015.
- **Coordinated** One-Day Workshop on Entrepreneurship Option in The Field of Engineering & Pioneer Internet of Things EOFEPIOT-2016 with IEEE Integral University Student Branch, Lucknow at Deptt. of ECE, Integral University Lucknow on 25-01-2016.
- **Designed** new program/courses for B.Sc (Physics, Maths & Electronics) program for Deptt. of Physics, Integral University, Lucknow.
- **Guided** more than 15 M.Tech Thesis and several B.Tech Projects.
- Member of **Academic Council** of Integral University, Lucknow.
- Member of **Board of Studies** and updated various syllabuses for Integral University, Lucknow on 2014-2022.
- Member of **Proctorial Board** of Integral University, Lucknow.
- Departmental M.Tech **Program Coordinator** from 2017-2020.
- Member of committee for curriculum development of B.Tech (SPV) program introduced from session 2021-22.

STUDENTS SUPERVISION

PhD Student Supervised

Dr Zohaib Hasan Khan

A DOWN-CONVERSION GILBERT CELL MIXER IN MODERN RF-TRANSCIEVER

MTech Students Supervised

- Eksha Rastogi Performance Analysis of SWIPT NOMA
- Samra Zubair Performance Analysis of ECG Data Compression Technique
- Anurag Singh Yadav Comparative Analysis of Digital Image Watermarking Based on DWAT, DCT and SVD
- Saba Roohi Comparative analysis of multi biometric fusion methods within multi-modal system based on IoMT platform
- Vijay Verma Higher Resolution Through Oversampling Using MSP430 Microcontroller
- Shri Om Mishra Designing of VHDL Based Fuzzy Logic Controller for Speed Control Operations
- Farazuddin Ahmed Implementation of FPAA Using Current Conveyor.
- Saurabh Chandra Performance Evaluation for Adaptive Equalization of WiMax 802.16e OFDMA System In Presence of Fading Channel.
- Sonal Design and Combined Study of Skyhook Slide Mode &Fuzzy Logic Controller.

- Anurag Tripathi Residue Arithmetic and Its Application in Communication and Signal Processing.
- Yogendra Singh Yadav Design and Performance Verification of High-Speed Mobile Data Transmission Application Based Switching System Using VHDL.
- Pratiksha Rai Design and Implementation of Floating-Point Multiplier by Incorporating Vedic Aphorisms.
- Fahad Hasrat Design and Implementation of Rc6 Block Cipher Using VHDL.
- Prashant Mathur Design of Error-Tolerant CMOS Adder Using Optimized Nano Technology.
- Sunit Kumar Trivedi Enhancement of Human Brain Image Using Weighted Sum and Multi Echo Frequency Contrast Technique.

Some B.Tech Project Guided

- Mohd Waris, Ruhel Saifee, Muddassir Hasan & Rashid Hayat Rais, Wireless Home Automation (Voice Controlled)
- Md Hidaytullah, Saif Ali, Sayyad & Mohd Saif Solar Refrigeration using Peltier
- Nabeeha Abbasi, Neha Gupta, Prachi Srivastava & Umra Zainab Door Security through Face Recognition using Matlab
- Parvez Ahmad, Md. Anwar, Mohd Zeeshan Yazdani & Manmohan Singh Fingerprint Recognition using Matlab
- Preeti Kumar, Mohd Zeya Taslim, Nikhil Tripathi & Mohd. Yusuf Khan Sun Tracking Solar Panel
- Kaveri Singh, Akshat Anand, Kopal Kapoor & Deepak Sharma Flash Door Intimation Over GSM Network to the Station
- Areeba Khan, Salman Hasan, Shujat Hasan & Amir Khan Robotic Arm Controlled by Bluetooth
- Jeetendra Bahadur Singh, Kaushal Kumar Singh, Durgendra Kr. Priyadarshini Microcontroller based weather station with PC Interfacing
- Saad Nizam, Sageer Alam Ansari, Shadab Akhtar Khan, Zakiya Mushfiq Bidirectional Visitors Counter
- Luv Kumar Srivastava Digital Speedometer
- Abhuday Mishra, Alok Dwivwadi, Mohammad Kashif Naved, Anil Kumar Singh R. F. Based Data Transmission using P.C.
- Priya Gupta, Sazid Ali Khan, Shaheda Bano, Shalini Gupta LASER Based Voice Communication with obstacle Indication
- Tanay Kediayl Yasir Faridi, Ujjawal Mishra Metro Railway Prototype

PUBLISHED/GRANT PATENTS

- AI-Enhanced Fault Detection and Alert System, Design No: 6322426, Registration Date: 27.10.2023, Grant Date: 13.12.2023.
- Intelligent Health Monitoring System, Design number: 6300691, Registration Date 01.08.2023, Grant Date: 31.08.2023.
- Leakage current controlled by sleep switch for low power application, Patent No. 2022/09667, Date of Application: 04.10.2022, Date of Grant: 30.11.2022.
- IVA-Parking: Intelligent Vehicle Parking Space Availability, Time Slot and Charge Notification Using IOT-Based Management Technology, Patent No.-202011015047 Dated:19/06/2020, Publication Date: 19.06.2020.
- Smart-Stick for Visually Impaired People, Application No: 202111045383, Filing Date: 06.10.2021, Publication date: 20.05.2022 CBR No.: 35340.

PUBLISHED/ACCEPTED SCI/SCOPUS RESEARCH PAPERS

- Ansari MM, Kumar S, Tariq U, Heyat MB, Akhtar F, Hayat MA, Sayeed E, Parveen S, Pomary D. Evaluating CNN Architectures and Hyperparameter Tuning for Enhanced Lung Cancer Detection Using Transfer Learning. Wiley, Journal of Electrical and Computer Engineering, Volume 2024, Article ID 3790617, 26 pages. DOI: <https://doi.org/10.1155/2024/3790617>
- Vaikunta Pai T, Maithili K, Arun Kumar R, Nagaraju D, Anuradha D, Kumar S, Ravuri A, Sunil kumar Reddy T, Sivaram M, Vidhya RG. DKCNN: Improving deep kernel convolutional neural network-based COVID-19 identification from CT images of the chest. J Xray Sci Technol. 2024;32(4):913-930. doi: [10.3233/XST-230424](https://doi.org/10.3233/XST-230424). PMID: 38820059.
- Deepajothi, S., Rao, V. S., Ambhika, C., Mandala, V., Rao, R. B., Kumar, S., ... & Nagaraju, D. (2024). A Comparative Study of Khasi Speech Recognition Systems with Recurrent Neural Network-Based Language Model. *Journal of Electrical Systems*, ISSN: 1112-5209, 20(6s), 1296-1305. DOI <https://journal.esrgroups.org/jes/article/view/2857>
- Gaurav Verma, Shailendra Kumar, Improvements to the Brain Tumor Segmentation and Classification System Using Convolutional Neural Networks, 2023 Tuijin Jishu/Journal of Propulsion Technology Vol. No. 44 Page No. 290 DOI <https://doi.org/10.52783/tjpt.v44.i2.153>
- Zohaib Hasan Khan, Shailendra Kumar, Deepak Balodi, A Next-generation down conversion mixer design using Schottky diode to improve performance for WSN 2023 International Journal of Computing and Digital Systems, Scopus 2210-142X, Received 31 Jan. 2023, Revised 24 Aug. 2023, Accepted 6 Sep. 2023, Published 1 Oct. 2023. DOI: <http://dx.doi.org/10.12785/ijcds/1401103>

- Zohaib Hasan Khan, Shailendra Kumar, Piyush Charan, A down conversion k-band mixer using current-reuse folded double-balanced architecture in 130-nm cmos process with high conversion gain and improved linearity 2023; Volume -12, issue-10, Page: 9920-9931
DOI: [10.48047/ecb/2023.12.10.703](https://doi.org/10.48047/ecb/2023.12.10.703), Eur. Chem. Bull. 2023,12(10), 9920-9931
- Zohaib Hasan Khan, Shailendra Kumar, Deepak Balodi, Piyush Charan, A 120 GHz Down Conversion Mixer Design for Improved Linearity, High Conversion-Gain and Low Noise-Figure in 130 Nm CMOS Technology 2023 Journal of Theoretical and Applied Information Technology, Scopus 1992-8645. DOI: <http://www.jatit.org/volumes/Vol101No9/24Vol101No9.pdf>
- Z. H. Khan, Shailendra Kumar, Deepak Balodi, A Low Leakage Down-conversion K-Band MIXER using Current-Reuse Double-Balanced Architecture in 130-nm CMOS Process for Modern RF Applications, International Journal of Computing and Digital Systems, 2021 ISSN-2210-142X. (Communicated on 2021). Vol-13, Issue-01. Received 7 Jul. 2021, Revised 15 Dec. 2022, Accepted 12 Jan. 2023, Published 31 Jan. 2023
https://journal.uob.edu.bh/bitstream/handle/123456789/4722/IJCDS_130102_1570732743.pdf?sequence=1&isAllowed=y
- Shirish Pandey, S. Hasan Saeed, Shailendra Kumar, Simulation and Optimization of Artificial Neural Network Based Air Quality Estimator, International journal of Recent Technology and Engineering (IJRTE) Volume-8 Issue-3 5477-5482, 2019 ISSN-2277-3878, 2019. Date of Publication 30.09.2019. DOI: [10.35940/ijrte.C4985.098319](https://doi.org/10.35940/ijrte.C4985.098319).
- Shailendra Kumar, T. Usmani, Surya Prakash, S.Hasan Saeed, N. R. Kidwai, Encoder Optimization Using Collaborative Filtering With Dictionary Learning To Improve PSNR, Advances in Computational Sciences and Technology, ISSN 0973-6107, PP. 147-158, 2017.

PAPER PUBLISHED IN INTERNATIONAL CONFERENCES

- Sultana, Arshiya, Fajjan Akhtar, Md Belal Bin Heyat, Priya Singh, Saba Parveen, Shailendra Kumar, Eram Sayeed et al. "Unveiling the efficacy of unani medicine in female disorders through machine learning: current challenges and opportunities." In *2023 20th International Computer Conference on Wavelet Active Media Technology and Information Processing (ICCWAMTIP)*, pp. 1-6. IEEE, 2023. DOI: [10.1109/ICCWAMTIP60502.2023.10385245](https://doi.org/10.1109/ICCWAMTIP60502.2023.10385245)
- Riyaz, Ahmed, Samar Jeet Singh, Shailendra Kumar, Mohammed Asim, and Asim Rahman Ansari. "Analysis of Three-Phase to Five-Phase System Under Unbalance condition." In *2023 International Conference on Power, Instrumentation, Energy and Control (PIECON)*, pp. 1-6. IEEE, 2023. Scopus INSPEC Accession Number: 22927926, ISBN No: 979-8-3503-9976-9. DOI: [10.1109/PIECON56912.2023.10085848](https://doi.org/10.1109/PIECON56912.2023.10085848)
- Yadav, Anurag Singh, and Shailendra Kumar. "Comparative analysis of digital image watermarking based on DCT, DWT and SVD with image scrambling technique for information security." In *2018 international conference on computational and characterization techniques in engineering & sciences*

(CCTES), pp. 89-93. IEEE, 2018. Electronic ISBN: 978-1-5386-4254-2, Print on Demand (PoD) ISBN:978-1-5386-4255-9, DOI: [10.1109/CCTES.2018.8674135](https://doi.org/10.1109/CCTES.2018.8674135).

- Singh, Baldeep, Shailendra Kumar, Vishal Singh Chandel, Syed Hasan Saeed, and Md Yunus Waheed. "Novel cost effective multi sensor network for the protection of national parks and wildlife from fire." In *2017 4th IEEE Uttar Pradesh Section International Conference on Electrical, Computer and Electronics (UPCON)*, pp. 107-112. IEEE, 2017. IEEE Catalogue Number: CFP17D27-CDR, ISBN No # 978-1-5386-3003-7, INSPEC Accession Number: 17487434, Oct 26-28, 2017. DOI: [10.1109/UPCON.2017.8251031](https://doi.org/10.1109/UPCON.2017.8251031)
- S. Khalid, N. Kumar, N. Agarwal, B. R. Singh, S. Kumar, Review of Latest Research in Optical Communication in International Conference on Emerging Technologies and Applications in Engineering, Technology and Sciences (ICETAETS 2008) at Deptt of Computer Science., Saurashtra University, Rajkot, Gujrat 13-01-2008.
- S. Khalid, N. Kumar, N. Agarwal, B. R. Singh, S. Kumar, M-Health: A New Research Trend for Health Professionals in International Conference on Emerging Technologies and Applications in Engineering, Technology and Sciences (ICETAETS 2008) at Deptt of Computer Science., Saurashtra University, Rajkot, Gujrat 13-01-2008.

PUBLISHED NON-SCI-SCOPUS BUT PEER REVIEWED RESEARCH PAPER

- Trivedi, Sunit Kumar, and Shailendra Kumar Singh. "Human Brain MRI Quality Improvement by Weighted Sum and Multi Echo Frequency Contrast Enhancement" *International Journal of Research and Development in Applied Science and Engineering (IJRDASE)*, ISSN No.: 2454-6844, Volume 2, Issue 1, July 2015, Impact Factor 3.2.
- Kumar, Shailendra, T. Usmani, SH SAEED, and NR KIDWAI. "A Comparative Analysis of Advance Three-Dimensional Video Coding for Mobile Three-Dimensional TV." *International Journal of Electronics and Communication Engineering (IJECE) ISSN (E) (2014): 59-64*, International Academy of Science Engineering and Technology ISSN 2278-991X Vol 3 Issue 5 Impact factor (JCC), ICV 3.0 28-08-2014.
- Shailendra Kumar, Saurabh Chandra, Minimization of Effect of Time Delay Spread on Radio Communications with Channel Adaptive Gain and Phase Adjustment Mapper, in *International Journal of Engineering and Management Research International VANDANA PUBLICATIONS* ISSN No.: 2250-0758 Volume-3 Issue-3 25-06-2013.
- Khan, Imran Ullah, S. Kumar, S. Hasan Saeed, and N. R. Kidwai. "Next Generation Video Coding Systems (H. 265/HEVC) and Its Comparison from H. 264/AVC Video Codec." *Int. Journal of Engineering Technology, Management and Applied Sciences* 3, no. 4 (2015): 42-45, ISSSN 2349-4476, 01-04-2015.
- Srivastava, S., S. Hasan Saeed, S. Rahman and Shailendra Kumar, Electronic Nose Applications in Medical Field in *International Journal of Life Sciences and Review (IJLSR)* Vol 1 issue 4 ISSN: 2394-9864 01-04-2015.

- Pandey, K. B., S. Kumar, Y. Yasin, and S. Rahman. "PHARMACY ON CHIP: ELECTRONIC PILL AS A NOVEL TOOL AND TREATMENT APPROACH IN HEALTH CARE SYSTEM." in International Journal of Life Sciences and Review (IJLSR) Vol 1 issue 4 ISSN: 2394-9864 01-04-2015.
- Mohammad, U., S Rahman, M. Y. Yasin and S. Kumar, Design of Low Cost Arm Control Robotic Moving Wheel Chair for Elderly & Physically Disabled Persons in International Journal of Life Sciences and Review (IJLSR) Vol 1 issue 4 ISSN: 2394-9864 01-04-2015.
- Prashant Mathur, Shailendra Kumar, Design of Error Tolerant CMOS Adder Using optimized Nano Technology in International Journal for Innovations in Engineering Science and Management vol. 3 Issue 3 PP8-14 on 03-03-015.
- Rai, Pratiksha, and S. Kumar. "Design of floating-point multiplier using vedic aphorisms." International Journal of Engineering Trends and Technology IJETT, International Seventh Sense Research Group, 11, no. 3 (2014): 123-126, ISSN: 2231-53811103 (Impact Factor 2.05) 17-05-2014.
- Yogendra Singh Yadav, Shailendra Kumar, S. Hasan Saeed, Implementation of Switching System for High-Speed Data Transmission Using VHDL International Journal of Engineering Trends and Technology IJETT in International Seventh Sense Research Group ISSN: 2231-53811103 (Impact Factor 2.05) 17-05-2014.
- Shri Om Mishra, Shailendra Kumar, S.Hasan Saeed, Implementation of Fuzzy Logic Controllers for Speed Control of Motors Using VHDL in International Journal of Engineering Trends and Technology IJETT International Seventh Sense Research Group ISSN: 2231-5381 (Impact Factor 2.05) 01-05-2014.
- Sonal Srivastava, Shailendra Kumar, S. H. Seed, A Comparative Study of Fuzzy Logic & Skyhook Slide Mode Controller International Journal of Scientific & Engineering Research in International Journal of Scientific & Engineering Research Volume 5 Issue 3 ISSN 2229-55181 03-03-2014.

BOOK CHAPTERS

- Khalid, Saifullah, and Shailendra Kumar. "ANFIS-SCC Control of Shunt Active Power Filter for Minimization of Harmonics for More Electric Aircraft System." In *Applications of Artificial Intelligence in Electrical Engineering*, pp. 1-22. IGI Global, 2020. DOI: DOI: [10.4018/978-1-7998-2718-4.ch001](https://doi.org/10.4018/978-1-7998-2718-4.ch001)
- Ansari, Mohd Munazzaer, and Shailendra Kumar. "Analysis of various image processing approaches in detecting and predicting lung cancer." In *Emerging Trends in IoT and Computing Technologies*, pp. 519-527. Routledge, 2022, ICEICT-2022 organized by Goel Institute of Technology Management, along with Goel Institute of Pharmacy Sciences, Lucknow (U.P, India in association with CRC Press (Taylor Francis Group) on 13-14 May 2022. ISBN No: 9781003350057, DOI: <https://doi.org/10.1201/9781003350057>
- Khan, Zohaib Hasan, Shailendra Kumar, and Deepak Balodi. "A comparative analysis of different types of mixer architecture for modern rf applications." In *Proceedings of Trends in Electronics and Health Informatics: TEHI 2021*, pp. 429-440. Singapore: Springer Nature Singapore, 2022. eBook Print

ISBN 978-981-16-8825-6, Online ISBN 978-981-16-8826-3, DOI: https://doi.org/10.1007/978-981-16-8826-3_36

- Nahin Nadeem, Dr. Shailendra Kumar, Enhancing Road Safety: A Survey of Cost-Effective Machine Learning-Based Collision Prediction & Detection Methods, , Strategies, Techniques, Applications and Resources, Jupiter Publications Consortium, P-192 ISBN: 978-93-91303-83-9, DOI: <https://www.doi.org/10.47715/JPC.B.978-93-91303-83-9>
 - Muskan Khan, Dr. Shailendra Kumar, Applications of Explainable AI for Healthcare 5.0: A Survey , Strategies, Techniques, Applications and Resources, Jupiter Publications Consortium, P-252 ISBN: 978-93-91303-83-9, DOI: <https://www.doi.org/10.47715/JPC.B.978-93-91303-83-9>
 - Warisha Fatima, Dr. Shailendra Kumar, Mechanization of Manual Scavenging: A Path towards Dignity and Efficiency, Strategies, Techniques, Applications and Resources, Jupiter Publications Consortium, P-260 ISBN: 978-93-91303-83-9, DOI: <https://www.doi.org/10.47715/JPC.B.978-93-91303-83-9>
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