



Aditya Acharya, Ph.D.

Designation : Associate Professor

Department : Department of Electronics Engineering
(JOINED THE INSTITUTE IN YEAR 2006)

Contact : 9437226026 (M)

Email : aditya@silicon.ac.in

RESEARCH INTERESTS

- ✓ Image and video processing
- ✓ Image enhancement under challenging conditions
- ✓ Image up-scaling and super-resolution
- ✓ AI and machine learning
- ✓ Medical image enhancement
- ✓ Computer vision

Academic Qualifications

Ph. D. : NIT Rourkela

Specialization : Image Processing and Computer Vision

M. Tech. : KIIT University, Bhubaneswar, Odisha

Specialization : Communication System Engineering

Teaching Experience/Industrial Experience/Research Experience

- ✓ 23 years of teaching experience
- ✓ 13 years of research experience

PUBLICATIONS

JOURNAL ARTICLES

- [1]. A. Pattanayak, **A. Acharya** and N.R. Panda, "Dark image enhancement using adaptive piece-wise sigmoid gamma correction (APSGC) in presence of optical sources", **Multimedia Tools and Applications Springer (SCI Index)**, 2023. (Impact Factor: 3.6)
- [2]. A. Pattanayak, **A. Acharya** and J. Dash, "Real-time enhancement using multi-linear adaptive gamma correction (MLAGC) for better night driving", **Journal of Real-Time Image Processing, Springer (SCI Index)** 20, 62 (2023). (Impact Factor: 3)
- [3]. **A. Acharya** and S.Meher, "Iterative spatial domain 2-D signal decomposition for effectual image up-scaling," **Multimedia Tools and Applications, Springer (SCI Index)**, vol. 80, pp. 5577-5616, October 2020. (Impact Factor: 3.6)

- [4]. **A. Acharya** and S.Meher, "Efficient fuzzy composite predictive scheme for effectual 2-D up-sampling of images for multimedia applications," **Journal of Visual Communication and Image Representation, Elsevier (SCI Index)**, vol. 44, pp. 156-186, April 2017. **(Impact Factor: 2.6)**
- [5]. **A. Acharya** and S.Meher, "Composite High Frequency Predictive Scheme for Efficient 2-D Up-scaling Performance," **Multimedia Tools and Applications, Springer (SCI Index)**, vol. 77, pp. 2153-89, January 2017. **(Impact Factor: 3.6)**
- [6]. G. Sahoo and **A. Acharya**, "An Efficient Fusion based Up-sampling Technique for Restoration of Spatially Compressed Images," *International Journal on Information Theory*, vol. 4, pp. 1-9, January 2015.
- [7]. **A. Acharya** and S.Meher, "Region adaptive unsharp masking based DCT interpolation for efficient video intra frame up-sampling." *IJCA Special Issue on Electronic Design and Signal Processing ICEDSP(3):29-33*, February 2013. Published by Foundation of Computer Science, New York, USA.

CONFERENCE PAPERS

- [1]. **A. Acharya** and S.Meher, "Robust video denoising for better subjective evaluation," in proceeding of IEEE International Conference on Image and Information Processing (ICIIP-2011), Shimla, Nov. 2011.
- [2]. **A. Acharya** and S.Meher, "An efficient, adaptive unsharp masking based interpolation for video intra frame up-sampling," in Proc. IEEE Asia Pacific Conference on Postgraduate Research in Microelectronics and Electronics, Dec. 2012.
- [3]. **A. Acharya** and S.Meher, "Region adaptive unsharp masking based Lanczos3 interpolation for video intra frame up-sampling," in Proc. IEEE Int. Conf. on Sensing Technology, Dec. 2012.
- [4]. **A. Acharya** and S.Meher, "Region adaptive unsharp masking based DCT interpolation for efficient video intra frame up-sampling," in Proc. Int. Conf. on Electronic Design and Signal Processing, Dec. 2012.
- [5]. **A. Acharya** and S.Meher, "No reference fuzzy unsharp masking based DCT interpolation for better 2-D up-sampling," in Proc. IEEE International Conference on Fuzzy Systems, ISI Calcutta, Hyderabad, July 2013.
- [6]. **A. Acharya** and S.Meher, "Region based Laplacian post-processing for better 2-D up-sampling," in Proc. Of annual IEEE International Conference INDICON, IIT Bombay, Dec. 2013.
- [7]. **A. Acharya** and S.Meher, " Local adaptive Laplacian for better 2-D up-sampling," in Proc. 2nd International Symposium on Computer, Communication, Control and Automation (3CA 2013), Singapore, Dec. 2013.
- [8]. **A. Acharya** and S. Meher, "Prediction Error based Sharpening Scheme for Efficient 2-D Up-sampling Performance," in Proc. IEEE International Conference on Electrical, Electronics, Signals, Communication and Optimization (EESCO), Vishakapatnam, Jan. 2015.

- [9]. **A. Acharya** and S. Meher, "An Improved Image Super-resolution using Local Adaptive Unsharp Masking," in Proc. IEEE International Conference on Electrical, Electronics, Signals, Communication and Optimization (EESCO), Vishakapatnam, January 2015.
- [10]. **A. Acharya** and S. Meher, " Error based Sharpening for Efficient 2-D Up-scaling Performance ," in Proc. Of annual IEEE International Conference INDICON, New Delhi, Dec. 2015.
- [11]. **A. Acharya** and A Venkat Giri, " Contrast Improvement using Local Gamma Correction," in Proc. IEEE 6th International Conference on Advanced Computing and Communication Systems (ICACCS 2020), Coimbatore, March 2020.
- [12]. A. Pattanayak, **A. Acharya** and N. Panda, "Local Gamma Correction using Bi-linear Function for Dark Image Enhancement," in Proc. IEEE International Conference on Information Technology (OCIT 2021), SIT Bhubaneswar, December 2021.
- [13]. A. Pattanayak, **A. Acharya**, "Bi-sigmoidal Function Based Adaptive Gamma Correctionfor Dark Image Enhancement," in Proc. IEEE International Conference on Circuits, Power and Intelligent Systems (CCPIS 2023), SIT Bhubaneswar, September 2023.
- [14]. A. Nayak, **A. Acharya**, "Enhancement of Dark Images in Presence of Optical Sources using Iterative Homomorphic Filter," in Proc. IEEE International Conference on Circuits, Power and Intelligent Systems (CCPIS 2023), SIT Bhubaneswar, September 2023. **(Best Paper Award)**

BOOK CHAPTER

- [1] **A. Acharya** and S. Meher, "Region adaptive unsharp masking based Lanczos-3 interpolation for 2-D up-sampling: Crisp-rule versus fuzzy-rule based approach," Sensing Technology: Current Status and Future Trends II Smart Sensor, Measurement and Instrumentation, **Springer** International Publishing, vol. 8, pp. 47-73, 2014.

ANY OTHER

Project Guided at Ph. D. level

- [1] Project – 1: Worked as principal supervisor in Silicon Research Promotion Scheme (SRPS) project, "Real-time Dark Image Enhancement in Presence of High Intensity Optical Sources for Better Night Driving Performance" from 1-1-2021 to 31-9-2021 at Silicon Institute of Technology, Bhubaneswar.
- [2] Project – 2: Worked as principal supervisor in SRPS project, "Seat-Belt Detection during Night Driving" from 1-4-2022 to 31-9-2022 at Silicon Institute of Technology, Bhubaneswar.

Ph. D Guidance

Currently guiding four Ph.D. Students