Sidharth Gautam

Multimedia Lab, Indian Institute of Technology Delhi, 110016 – India

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https://sidharthscorpio.github.io/

Research Interests

Single Image Dehazing, Machine Learning for Image Processing, Neural Networks.

Academic Qualifications

Indian Institute of Technology Delhi (Dept. of Electrical Engineering) — **New Delhi, India**
Ph.D, 7.92/10 (CGPA) — *Jan, 2016 - present (Synopis Done)*
Specialization in Machine Learning and Image Processing

Delhi Technological University (Dept. of Electronics & Communication) — **Delhi, India**
Master of Technology, 8.41/10 (CGPA) — *Aug, 2012 - Nov, 2014*
Signal Processing & Digital Design

University Institute of Engineering & Technology — **KUK,India**
Bachelor of Technology, 62.5% — *Aug, 2007 - Jul, 2011*
Electronics & Communication Engg.

Academic Experience

IIT Delhi — **New Delhi, India**
Teaching Assistant — *Jan, 2016–Present*

BML Munjal University — **Gurgaon, India**
Academic Fellow, Dept. of Electronics and Communication Engineering — *July, 2014 – Dec, 2015*

Aravali College of Engineering and Management — **Faridabad, India**
Lecturer, Dept. of Electronics and Communication Engineering — *July, 2009 – July, 2012*

Relevant Courses

Linear Algebra, Probability & Random Process, Mathematical Methods for Signal Processing, Advanced Digital Signal Processing, Digital Image Processing, Machine Learning, Computer Vision, Pattern Recognition.

Publications

- **Sidharth Gautam**, Tapan Gandhi, B.K. Panigrahi, "An improved Air-light estimation scheme for single haze images using color constancy prior" in IEEE Signal Processing Letters, vol. 27, pp. 1695-1699, 2020, doi: 10.1109/LSP.2020.3025462. Impact Factor: 4.180
- **Sidharth Gautam**, Tapan Gandhi, B.K. Panigrahi, "A Model-based dehazing scheme for unmanned aerial vehicle system using radiance boundary constraint and graph model" in Journal of Visual Communication and Image Representation, Volume 74,2021, 102993, ISSN 1047-3203. Impact Factor: 2.591
- **Sidharth Gautam**, Tapan Gandhi, B.K. Panigrahi, "An Advanced Visibility Restoration Technique for Underwater Images", in 2018 25th IEEE International Conference on Image Processing (ICIP), 1757-1761.
- **Sidharth Gautam**, Tapan Gandhi, B.K. Panigrahi, "Single image dehazing using image boundary constraint and nearest neighborhood optimization", in Proceedings of the 11th Indian Conference on Computer Vision, Graphics and Image Processing, New York, NY, USA, 2018, ICVGIP 2018, Association for Computing Machinery.
- **Sidharth Gautam**, Tapan Gandhi, B.K. Panigrahi, "An integrated edge-preserving dehazing approach for visibility restoration in single images.", Elsevier Journal of Signal Processing: Image Communication, Ms No. IMAGE-D-20-00179. (**Under Revision**).

Organization of Scientific Journals/Meetings

Journal Reviewer

- IEEE Transactions on Image Processing.
- Applied Soft Computing Journal, Elsevier.
- Journal of Visual Communication and Image Representation, Elsevier.

Technical Program Committee Member

- **ICRCICN-2016:** Second IEEE International Conference on Research in Computational Intelligence and Communication Networks, India.
- **ICACCP-2017:** First International Conference on Advanced Computational and Communication Paradigms, India.

PhD Thesis

Title: Development of effective and robust techniques for single image dehazing.

Abstract: Outdoor images captured in inclement weather conditions such as rain, smoke, thunder, and sandstorms appear hazy due to poor atmospheric visibility. The presence of haze obscures vision to a great extent and responsible for diminished color and reduced contrast which makes the detection and identification of visual objects within the captured image more difficult. The visual quality of these images plays a crucial role in many types of scientific research and becomes important for developing effective restoration technique that can remove haze and regain perceptual image quality for computer vision application used for video surveillance, object recognition, tracking, and navigation.

Technical Skills

Programming Languages & Tools: Python, MATLAB, Cuda, LaTeX

Packages & Libraries: Tensorflow, Pytorch, caffe

Operating Systems: Linux (Ubuntu), Windows

Scholarships

- **Graduate Aptitude Test in Engineering** Qualified in 2012 (Electronics and Communication Engineering) and awarded MHRD Scholarship among 1,76,944 candidates during M. Tech (2012-2014).
- International travel grant from IIT Delhi for presenting paper in 25th ICIP-2018 conference, Athens, Greece.
- National travel grant from IIT Delhi for presenting paper in ICVGIP 2018 conference, Hyderabad, AP.

Conferences/Workshops

- International Conference on Image Processing (ICIP-2018), Athens, Greece.
- Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP-2018), International Institute of Information Technology, Hyderabad, 2018.

References

Dr. Tapan Gandhi (Research Affiliate MIT USA):
Associate Professor, Dept. of Electrical Engg., IIT Delhi,
Email: tgandhi@ee.iitd.ac.in
Phone: +91-9599-284080

Dr. B.K. Panigrahi (PhD Supervisor):
Professor, Dept. of Electrical Engg., IIT Delhi,
Email:bkpanigrahi@ee.iitd.ac.in
Phone: +91-9582-782220

Date: January 17, 2021
Place: IIT Delhi

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