SANJAY GHOSH

PhD Student
Department of Electrical Engineering, Indian Institute of Science.
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RESEARCH INTERESTS

- Inverse problems in imaging (denoising, deblurring, image filtering, restoration *etc.*)

- Reconstruction and post-processing in medical imaging (MRI, d-MRI, f-MRI, neuro-imaging *etc.*)

- Computational imaging (light field imaging, HDR imaging, hyper-spectral imaging *etc.*)

- Graph signal processing

PROFESSIONAL APPOINTMENT

- **Visiting Scholar**   Aug 2019 - *Present.*
  Department of Electrical and Computer Engineering,
  The University of Iowa, Iowa City, USA.

EDUCATION

- **Doctor of Philosophy** - Electrical Engineering (Signal Processing)   Aug 2014 - Oct 2019.
  Indian Institute of Science, Bangalore, India.   (**Expected**)
  Thesis: Kernel Based Image Filtering: Fast Algorithms and Applications
  Advisor: Dr. Kunal Narayan Chaudhury [link]

- **Master of Technology** - Electrical Engineering (Communication Systems)   Aug 2011 - Jun 2013.
  Indian Institute of Technology Madras, India.
  Advisor: Prof. Arun Pachai Kannu [link]

- **Bachelor of Technology** - Electronics and Communication Engineering   Aug 2007 - Jun 2011.
  West Bengal University of Technology, Kolkata, India.

TEACHING EXPERIENCES

- **Lecturer**, National Institute of Technology Jamshedpur, India   Aug 2013 - Jul 2014.
  `Courses taught:`

  - Digital Image Processing (Jan - May 2014)
  - Wireless Communications (Jan - May 2014)
  - Optimization Techniques (Aug - Dec 2013)

- **Teaching Assistant**

  1. Indian Institute of Science   Aug 2016 - Dec 2016.
     - Dynamics of Linear Systems
  2. Indian Institute of Technology Madras   Aug 2011 - Jun 2013.
     - Digital Signal Processing (Aug - Dec 2012)

AWARDS / FELLOWSHIPS

- Finalist, Best Student Paper Awards, National Conference on Communications (NCC) 2019.

- **Best Student Paper Award**, IEEE Global Conference on Signal and Information Processing (GlobalSIP) 2018.

- Finalist, Best Student Paper Awards, Int'l Conf. on Signal Processing and Communications (SPCOM) 2016.

- Merit-Cum-Mean Scholarship, Govt. of West Bengal, India, (2007-2011).

- Merit Fellowship (/Tuition fees waiver), West Bengal University of Technology, Kolkata, India, (2007-2011).

- National Merit Scholarship, Govt. of India, (2004 -2006).

PUBLICATIONS ....

Journals:

- **S. Ghosh**, R. G. Gavaskar, D. Panda, and K. N. Chaudhury, "Fast scale-adaptive bilateral texture smoothing," *IEEE Transactions on Circuits and Systems for Video Technology*, 2019. (accepted) [link]

- **S. Ghosh**, P. Nair, and K. N. Chaudhury, "Optimized Fourier bilateral filtering," *IEEE Signal Processing Letters*, vol. 25, no. 10, pp. 1555-1559, 2018. [link]

- **S. Ghosh** and K. N. Chaudhury, "Artifact reduction for separable nonlocal means," *Journal of Electronic Imaging*, vol. 26, no. 6, pp. 063012, 2017. [link]

- **S. Ghosh**, A. K. Mandal, and K. N. Chaudhury, "Pruned non-local means," *IET Image Processing*, vol. 11, no. 5, pp. 317-323, 2017. [link]

- **S. Ghosh** and K. N. Chaudhury, "Fast separable non-local means," *Journal of Electronic Imaging*, vol. 25, no. 2, pp. 023026, 2016. [link]

- **S. Ghosh** and K. N. Chaudhury, "On fast bilateral filtering using Fourier kernels," *IEEE Signal Processing Letters*, vol. 23, no. 5, pp. 570-574, 2016. (selected for presentation at ICIP 2016) [link]

Conferences:

- **S. Ghosh** and K. N. Chaudhury, "Fast bright-pass bilateral filtering for low-light enhancement", *Proc. IEEE International Conference on Image Processing (ICIP)*, Taipei, Taiwan, 2019.

- **S. Ghosh**, R. G. Gavaskar, and K. N. Chaudhury, "Saliency guided image detail enhancement," *Proc. National Conference on Communications (NCC)*, Bangalore, India, 2019. (Finalist, Best Student Paper Awards)

- **S. Ghosh** and K. N. Chaudhury, "Color bilateral filtering using stratified Fourier sampling," *Proc. IEEE Global Conference on Signal and Information Processing (GlobalSIP)*, pp. 26-30, California, USA, 2018. [link]

- Unni V. S., **S. Ghosh**, and K. N. Chaudhury, "Linearized ADMM and fast nonlocal denoising for efficient plug-and-play restoration," *Proc. IEEE Global Conference on Signal and Information Processing (GlobalSIP)*, pp. 11-15, California, USA, 2018. (BEST STUDENT PAPER AWARD) [link]

- **S. Ghosh** and N. Tripathi, "Guided filtering of hyperspectral images," *Proc. IEEE Winter Conference on Applications of Computer Vision (WACV)*, pp. 1954-1962, Lake Tahoe, USA, 2018. [link]

- **S. Ghosh**, S. Nayak, and K. N. Chaudhury, "Lucky DCT aggregation for camera shake removal," *Proc. IEEE International Conference on Image Processing (ICIP)*, pp. 3790-3794, Beijing, China, 2017. [link]

- **S. Ghosh** and K. N. Chaudhury, "Fast bilateral filtering of vector-valued images", *Proc. IEEE International Conference on Image Processing (ICIP)*, pp. 1823-1827, Arizona, USA, 2016. [link]

- **S. Ghosh** and K. N. Chaudhury, "Fast and high-quality bilateral filtering using Gauss-Chebyshev approximation", *Proc. International Conference on Signal Processing and Communications (SPCOM)*, Bangalore, India, 2016. (Finalist, Best Student Paper Awards) [link]

- **S. Ghosh** and A. P. Kannu, "Relay placement and spectrum sharing strategies for soft and fractional frequency reuse schemes," *Proc. National Conference on Communications (NCC)*, India, 2015. (**M. Tech. thesis work**) [link]

REFERENCES ....

- Dr. Kunal N. Chaudhury [link]
  Assistant Professor,
  Department of Electrical Engineering,
  Indian Institute of Science
  Email: kunal@iisc.ac.in

- Prof. Arun Pachai Kannu [link]
  Associate Professor,
  Department of Electrical Engineering,
  Indian Institute of Technology Madras
  Email: arunpachai@ee.iitm.ac.in