

Chandra Sekhar Seelamantula

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Date of birth: August 5, 1976

1. Education

Degree	University/Institution	Class obtained/Distinction	Year of graduation
B.E.	University College of Engineering, Department of Electronics and Communication Engineering (ECE), Osmania University, Hyderabad	First rank holder and recipient of The Outstanding Student award, Prof. K. K. Nair Gold Medal, and Best Thesis Award	June 1999
Ph.D.	Indian Institute of Science (IISc) Bangalore, Department of Electrical Communication Engineering (ECE)	IBM India Research Lab Fellowship	March 2006

2. Professional Career

From	To	Designation	Organization/Institute
September 27, 2020	Present	Professor	Department of Electrical Engineering, Indian Institute of Science, Bangalore
September 27, 2014	September 26, 2020	Associate Professor	Department of Electrical Engineering, Indian Institute of Science, Bangalore
July 2012	Present	Associate Faculty	Centre for Neuroscience Indian Institute of Science, Bangalore
July 20, 2009	September 26, 2014	Assistant Professor	Department of Electrical Engineering, Indian Institute of Science, Bangalore
April 1, 2006	July 15, 2009	Postdoctoral fellow	Biomedical Imaging Group, Ecole polytechnique fédérale de Lausanne, Switzerland
October 1, 2005	March 15, 2006	Technology Consultant	M/s. Esqube Communication Solutions Private Limited, Bangalore

3. Honors and Recognition

1. Chair, Graduate Aptitude Test in Engineering (GATE) - Joint Admission Test for Masters (JAM), Indian Institute of Science zone (2022-2023). GATE and JAM are nation-wide entrance exams.
2. Vice-Chair, GATE-JAM, IISc zone (2020-2021, 2021-2022).
3. Senior Area Editor, IEEE Transactions on Image Processing
4. Outstanding Editorial Board Member Award, IEEE Transactions on Image Processing.
5. Qualcomm Innovation Fellowship together with PhD students — four consecutive years (2022, 2021, 2020, 2019).
6. Member, Awards Committee of IEEE Computational Imaging Technical Committee.
7. Recipient of Grand Challenges Exploration — India (Round 5) research award funded by Bill and Melinda Gates Foundation and Biotechnology Industrial Research Assistance Council (BIRAC), Government of India.

8. Digital Health Prize at the National Bio-Entrepreneurship Competition 2018 organized by Biotechnology Industrial Research Assistance Council (BIRAC) and Centre for Cellular and Molecular Platforms (C-CAMP) under the auspices of the Department of Biotechnology (DBT).
9. Elected to IEEE Technical Committee on Computational Imaging, since 2020.
10. Senior Member, IEEE since October 2012.
11. Tutorials Co-Chair, IEEE International Symposium on Biomedical Imaging (ISBI) 2020.
12. General Chair, International Conference on Signal Processing and Communications (SPCOM) 2020, Bangalore.
13. Organizing Committee member, IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP) 2025, Hyderabad. ICASSP will be held in India for the first time in 2025 and I am a part of the team that bid for hosting ICASSP in India.
14. Publicity Chair, Interspeech 2018. Interspeech is a premier international conference in the area of speech processing and is held under the auspices of International Speech Communication Association (ISCA). I was a part of the team that bid for bringing Interspeech to India. Interspeech was held in India for the first time ever in 2018.
15. Associate Editor, IEEE Transactions on Image Processing since March 2018.
16. Senior Area Editor, IEEE Signal Processing Letters since May 2017.
17. Associate Editor, IEEE Signal Processing Letters (2013-2017; two terms).
18. Chair, IEEE Signal Processing Society Bangalore Chapter. Vice-Chair (2014-2018) and Treasurer (2010-2013).
19. Associate Editor, Society for Photonics and Industrial Electronics (SPIE) Journal of Electronic Imaging (2014-2018).
20. Session Chair at Interspeech 2017, IEEE International Symposium on Biomedical Imaging (ISBI) 2017.
21. Special session organizer, IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP) 2015.
22. Affiliate member, IEEE Signal Processing Theory and Methods Technical Committee, IEEE Bio-imaging and Signal Processing Technical Committee.
23. **Prof. Priti Shankar Teaching Award - 2013** conferred by the Indian Institute of Science, Bangalore.

4. Guidance of Students

PhD: 13 awarded (2 Best Thesis Awards); 7 in progress

Masters by Research: 8 awarded (2 Best Thesis Awards); 2 in progress

Masters by Project: more than 30 awarded (5 Outstanding Student Awards), 4 in progress

5. Courses Taught

Digital Signal Processing, Digital Image Processing, Time-Frequency Analysis and Wavelets, Neural Signal Processing

6. Current Research Focus

Inverse problems in signal/image processing and computational imaging, Sparse Signal Processing, Sub-Nyquist sampling, Phase retrieval, Biomedical imaging, Time-frequency analysis, Splines, Wavelets, Machine learning

7. Membership of Professional Bodies

1. Executive President and founding member of Indian Speech Communication Association (IndSCA) (founded 2019)
2. Senior member, The Institute of Electrical and Electronics Engineers (IEEE)
3. Member, IEEE Signal Processing Society, USA
4. Member, Indian Unit for Pattern Recognition and Artificial Intelligence (An affiliate of International Association for Pattern Recognition)
5. Member of the Association of Computing Machinery (ACM)
6. Member of The Optical Society of America, The Optical Society of India
7. Member of International Speech Communication Association
8. Life member, The Institution of Electronics and Telecommunication Engineers (IETE), New Delhi

8. Selected Invited Talks

Sl. No.	Title of the talk	Event	Duration
1	Neuromorphic Sampling	Asilomar Conference on Signals, Systems, and Computing, 2021. (Virtual)	October 31- November 3, 2021
2	Generalized weighted lp minimization for accurate interferometric phase estimation	<u>DMV-OMG Annual Conference (Clifford Analysis and Phase Retrieval in Imaging)</u> (Virtual)	September 27 - October 1, 2021
3	Healthcare in the age of AI	Keynote talk, <u>IEEE SPS Winter School on Biomedical Signal and Image Processing</u>	November 12-14, 2019
4	Deep learning for sparse coding	<u>Winter School on Speech and Audio Processing (WiSSAP) 2019</u>	January 27-29, 2019
5	Unrolled iterative algorithms for sparse coding	Special session on Deep Learning at <u>International Conference on Signal Processing and Communications (SPCOM)</u> , IISc	July 16-19, 2018
6	There's more to a spectrogram than meets the eye	Special session on Speech Processing at the <u>International Conference on Signal Processing and Communications (SPCOM)</u> , IISc	July 16-19, 2018
7	The BIG bang	<u>Twenty Years of Biomedical Imaging and Splines (TYBIS)</u> , Ecole polytechnique fédérale de Lausanne	March 23, 2018
8	ESOLA: Epoch-synchronous overlap-add for speech applications	<u>Winter School in Speech and Audio Processing (WiSSAP)</u> , Indian Institute of Technology Guwahati	January 19-22, 2018
9	Sub-Nyquist sampling	Tutorial at the Osmania University College of Engineering Centenary Conference, Hyderabad	December 29-30, 2017
10	Deep learning meets sparse coding	<u>Brain, Computation, and Learning workshop</u> , IISc, funded by Pratiksha Trust	January 9-12, 2017
11	The Riesz transform -- A new tool for spectro-temporal analysis of speech signals	Keynote talk, <u>IEEE Israel Section International Conference on the Science of Electrical Engineering (ICSEE), Symposium on Speech and Audio Processing</u> , held in Eilat, Israel	November 16-18, 2016
12	What can signal processing do for coherent imaging?	<u>Johannes Kepler University (Zentrum für Oberflächen und Nanoanalytik)</u> , Linz, Austria	June 28, 2016
13	Phase retrieval in shift-invariant spaces and application to optical imaging	<u>Volkswagen Stiftung MOIMA Symposium on Mathematical Optics, Image Modelling, and Algorithms</u> , at Schloss Herrenhausen, Hannover, Germany	June 20-23, 2016
14	Exact phase retrieval in principal shift-invariant spaces	<u>Department of Electrical Engineering, Indian Institute of Technology Bombay</u> , Mumbai	May 12, 2016
15	Sub-Nyquist sampling -- Recent advances and applications	Tutorial at <u>Twenty Second National Conference on Communications (NCC)</u> , Indian Institute of Technology Guwahati	March 4, 2016
16	Speech prosody modification	Workshop on Text-to-Speech synthesis, Dhirubhai Ambani Institute of Information and Communication Technology, Gandhinagar	June 16-19, 2014
17	Active shapes	<u>Visualization and Data Analytics Seminar, Department of Computer Science, University of Vienna</u> , Austria	May 21, 2014

9. Full List of Publications

Journal publications

1. J. R. Harish Kumar, C. S. Seelamantula, J. H. Gagan, Y. S. Kamath, N. I. R. Kuzhuppilly, U. Vivekanand, P. Gupta, and S. Patil, "Akshi IMAGE: A Glaucoma-specific Fundus Image Database," *Nature Scientific Data*, <https://www.nature.com/articles/s41597-023-01943-4>
2. Mangalwedhekar R., Singh N., Thakur C.S., Seelamantula C.S., Jose M., Nair D., (2022), Achieving nanoscale precision using Neuromorphic localization microscopy, *Nature Nanotechnology*, <https://www.nature.com/articles/s41565-022-01291-1>
3. S. Mache, A. Chatterjee, K. Rajendran, and C. S. Seelamantula, "Hilbert-Huang transform and energy rate functions for earthquake source characterization — A study from the Japan Trench," To appear in *Bulletin of the Seismological Society of America*, 2022.
4. P. K. Pokala, R. V. Hemadri, and C. S. Seelamantula, "Iteratively reweighted minimax-concave penalty minimization for accurate low-rank plus sparse matrix decomposition," *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 2021, doi: 10.1109/TPAMI.2021.3122259.
5. J. Sadasivan, J. K. Dhiman, and C. S. Seelamantula, "Musical noise suppression using a low-rank and sparse matrix decomposition approach," *Speech Communication*, vol. 125, pp. 41-52, December 2020.
6. A. R. Mangalore, C. S. Seelamantula, and C. S. Thakur, "Neuromorphic fringe projection profilometry," To appear in *IEEE Signal Processing Letters*, 2020.
7. S. K. Shastri, S. Rudresh, R. Anand, S. Nagesh, C. S. Seelamantula, and A. K. Thittai, "Axial super-resolution in ultrasound imaging with application to non-destructive evaluation," vol. 108, no. 106183, *Elsevier Ultrasonics*, December 2020.
8. A. Mahurkar and C. S. Seelamantula, "Minkowski-algebra-based super-sparse array design for super-resolution ultrasound imaging," To appear in *IEEE Signal Processing Letters*, 2020.
9. S. Mukherjee and C. S. Seelamantula, "Quantization-aware phase retrieval," *Special issue on Mathematical Optics, Imaging, and Applications, International Journal of Wavelets, Multiresolution, and Information Processing (Invited paper)*, 2020.
10. J. R. Harish Kumar, C. S. Seelamantula, A. Mohan, R. Shetty, T. J. M. Berendschot, and C. A. B. Webers, "Automatic analysis of normative retinal oximetry images," *PLoS ONE*, May 2020.
11. J. Sadasivan, S. Mukherjee, and C. S. Seelamantula, "Signal denoising using the minimum-probability-of-error criterion," vol. 9, e3, *APSIPA Transactions on Signal and Information Processing*, January 2020.
12. J. R. Harish Kumar, C. S. Seelamantula, Y. S. Kamath, and R. Jampala, "Rim-to-disc ratio outperforms cup-to-disc ratio for glaucoma prescreening," *Nature Scientific Reports*, 9:7099, 2019.
13. J. Sadasivan, C. S. Seelamantula, N. R. Muraka, "Speech enhancement using a risk estimation approach," vol. 116, pp. 12-29, *Speech Communication*, January 2020.
14. H. Sundar, T. V. Sreenivas, and C. S. Seelamantula, "TDOA-based multiple source localization without association ambiguity," *IEEE/ACM Transactions on Audio, Speech, and Language Processing*, vol. 26, no. 11, pp. 1976-1990, November 2018.
15. B. A. Shenoy, S. Mulleti, and C. S. Seelamantula, "On 2-D Hilbert integral equations, generalized minimum-phase signals, and phase retrieval," *IEEE Transactions on Signal Processing*, vol. 66, no. 14, pp. 3906-3917, July 15, 2018.
16. S. Mukherjee and C. S. Seelamantula, "Phase retrieval from binary measurements," *IEEE Signal Processing Letters*, pp. 348-352, vol. 25, no. 3, March 2018.
17. S. Rudresh, S. Nagesh, and C. S. Seelamantula, "Asymmetric pulse modeling for FRI sampling," vol. 66, no. 8, pp. 2027-2040, *IEEE Transactions on Signal Processing*, 2018.
18. K. S. Chandran, C. S. Seelamantula, and S. Ray, "Duration analysis using matching pursuit algorithm reveals longer bouts of gamma rhythm," vol. 119, pp. 808-821, *Journal of Neurophysiology*, 2018.
19. A. Bhowmik, S. Shit, and C. S. Seelamantula, "Training-free, single-image super-resolution using a dynamic convolutional network," *IEEE Signal Processing Letters*, vol. 25, no. 1, pp. 85-89, Jan. 2018. This article featured in the Top 10 popular articles of *IEEE Signal Processing Letters* for three consecutive months (including early access).
20. S. Mulleti, A. Singh, V. Brahmkhatri, K. Chandra, T. Raza, S. P. Mukherjee, C. S. Seelamantula, and H. S. Atreya, "Super-resolved nuclear magnetic resonance spectroscopy," Article No. 9651, *Nature Scientific Reports*, 2017.

21. S. Mulleti and C. S. Seelamantula, "Paley-Wiener characterization of kernels for finite-rate-of-innovation sampling," *IEEE Transactions on Signal Processing*, vol. 65, no. 22, pp. 5860-5872, 2017.
22. S. Rudresh and C. S. Seelamantula, "Finite-rate-of-innovation-based super-resolution radar imaging," *IEEE Transactions on Signal Processing*, vol. 65, no. 19, pp. 5021-5033, 2017.
23. A. Chaturvedi, S. K. Nagaraj, S. S. Gorthi, and C. S. Seelamantula, "An efficient microscale technique for determining the erythrocyte sedimentation rate," *Journal of the Society for Laboratory Automation and Screening (SLAS) Technology*, vol. 22, no. 5, pp. 565-572, 2017.
24. A. S. Murthy, C. S. Seelamantula, and T. V. Sreenivas, "Optimum short-time polynomial regression for signal analysis," *Sadhana Journal of the Indian Academy of Sciences*, vol. 41, no. 11, pp. 1245-1260, Nov. 2016.
25. S. Mulleti, B. A. Shenoy, and C. S. Seelamantula, "FRI sampling on structured nonuniform grids — Application to super-resolved optical imaging," *IEEE Transactions on Signal Processing*, vol. 64, no. 15, pp. 3841-3853, 2016.
26. K. Upadhyaya, C. S. Seelamantula, and K. V. S. Hari, "A risk minimization framework for channel estimation in OFDM systems," *Signal Processing (Elsevier)*, pp. 78-87, vol. 128, 2016.
27. B. A. Shenoy, S. Mulleti, and C. S. Seelamantula, "Exact phase retrieval in principal shift-invariant spaces," *IEEE Transactions on Signal Processing*, vol. 64, no. 2, pp. 406-416, 2016. **This article featured on the cover-page of the IEEE Transactions on Signal Processing January/February 2016 issue.**
28. S. Mulleti and C. S. Seelamantula, "Ellipse fitting using the finite-rate-of-innovation sampling principle," *IEEE Transactions on Image Processing*, vol. 25, no. 3, pp. 1451-1464, 2016.
29. S. Mukherjee, R. Basu, and C. S. Seelamantula, "L1-K-SVD: A robust dictionary learning algorithm with simultaneous update," *Signal Processing (Elsevier)*, vol. 123, pp. 42-52, 2016.
30. R. Shenoy and C. S. Seelamantula, "A zero-crossing rate property of power complementary analysis filterbank outputs," *IEEE Signal Processing Letters*, vol. 22, no. 12, pp. 2354-2358, 2015.
31. H. Kishan and C. S. Seelamantula, "Patch-based and multiresolution optimum bilateral filters for denoising images corrupted by Gaussian noise," *SPIE Journal of Electronic Imaging*, vol. 24(5), pp. 053021-1 — 053021-15, Sept./Oct. 2015.
32. M. Venkatesh, K. Mohan, and C. S. Seelamantula, "Directional bilateral filters for smoothing fluorescence microscopy images," **Invited article**, *American Institute of Physics (AIP) Advances Special Issue on Emerging Topics in Fluorescence Microscopy and Imaging*, vol. 5, 084805-1 — 084805-17, 2015.
33. H. Aragonda and C. S. Seelamantula, "Demodulation of narrowband speech spectrograms using the Riesz transform," *IEEE Transactions on Audio, Speech, and Language Processing*, vol. 23, no. 11, pp. 1824, 2015.
34. B. A. Shenoy and C. S. Seelamantula, "Exact phase retrieval for a class of 2-D parametric signals," *IEEE Transactions on Signal Processing*, vol. 63, no. 1, pp. 90-103, 2015.
35. R. R. Shenoy and C. S. Seelamantula, "Spectral zero-crossings — Localization properties and applications," *IEEE Transactions on Signal Processing*, vol. 63, no. 12, pp. 3177-3190, 2015.
36. C. S. Seelamantula and S. Mulleti, "Super-resolution reconstruction in frequency-domain optical-coherence tomography," *IEEE Transactions on Signal Processing*, vol. 62, no. 19, pp. 5020-5029, 2014.
37. S. Mukherjee and C. S. Seelamantula, "Fienup algorithm with sparsity constraints: Application to frequency-domain optical-coherence tomography," *IEEE Transactions on Signal Processing*, vol. 62, no. 18, pp. 4659-4672, 2014.
38. C. S. Seelamantula and R. R. Shenoy, "A contraction mapping approach for robust estimation of lagged autocorrelation," vol. 21, no. 9, pp. 1054-1058, *IEEE Signal Processing Letters*, 2014.
39. A. Venkitaraman and C. S. Seelamantula, "Binaural signal processing motivated generalized analytic signal construction and AM-FM demodulation," *IEEE Transactions on Audio, Speech, and Language Processing*, vol. 22, no. 6, pp. 1023-1036, 2014.
40. S. R. Krishnan, C. S. Seelamantula, and P. Chakravarti, "Spatially adaptive kernel regression using risk minimization," vol. 21, no. 4, pp. 445-448, *IEEE Signal Processing Letters*.
37. S. Agnihotri, P. V. D. S. Sundeeep, C. S. Seelamantula, and R. Balakrishnan, "Quantifying vocal mimicry in the Greater Racket-tailed Drongo: A comparison of automated methods and human assessment," *Public Library of Sciences One (PLoS 1) Biology*, vol. 9, no. 3, e89540, March 2014.
38. A. Venkitaraman, A. Adiga, and C. S. Seelamantula, "Auditory motivated Gammatone wavelet transform," *Signal Processing journal (Elsevier)*, vol. 94, pp. 608-619, January 2014.
39. A. Venkitaraman and C. S. Seelamantula, "Fractional Hilbert transform extensions and associated analytic signal construction," *Signal Processing journal (Elsevier)*, vol. 94, pp. 359-372, January 2014.
40. T. Lasser and C. S. Seelamantula, "Extended-focus optical-coherence microscopy — Structural and functional imaging, from tissue to cell," **Invited article**, November 15, 2013, *Biophotonics magazine*.

41. A. Venkitaraman and C. S. Seelamantula, "On computing the amplitude, phase, and frequency modulations using a vector interpretation of the analytic signal," *IEEE Signal Processing Letters*, vol. 20, no. 12, pp. 1187-1190, December 2013. This article also featured in the top 25 popular articles of *IEEE Signal Processing Letters*.
42. A. Venkitaraman and C. S. Seelamantula, "Temporal envelope fit of transient audio signals," *IEEE Signal Processing Letters*, vol. 20, no. 12, pp. 1191-1194, December 2013.
43. C. S. Seelamantula and T. Lasser, "Hilbert transform relations in frequency-domain optical-coherence tomographic imaging," **Invited article**, vol. 93, no. 1, pp. 139-148, January-March 2013, *Journal of the Indian Institute of Science*, **Special issue on Imaging and Microscopy**.
44. R. R. Shenoy and C. S. Seelamantula, "Spectral-envelope—group-delay models for transients," *Journal of Acoustical Society of America*, vol. 33, issue 5, pp. 2788-2802, 2013.
45. S. R. Krishnan, M. M. Doss, and C. S. Seelamantula, "A Savitzky-Golay filtering perspective of dynamic feature computation," *IEEE Signal Processing Letters*, vol. 20, no. 3, pp. 281-284, 2013.
46. S. R. Krishnan and C. S. Seelamantula, "On the selection of optimum Savitzky-Golay filters," vol. 61, issue 2, pp. 380-391, *IEEE Transactions on Signal Processing*, 2013.
47. S. R. Krishnan and C. S. Seelamantula, "SURE-optimal bandwidth selection in nonparametric regression," vol. 11, no. 2-3, pp. 133-163, **Special issue on Sampling Theory and Applications**, *Sampling Theory in Signal and Image Processing journal*, 2012.
48. S. Mukherjee and C. S. Seelamantula, "A non-iterative phase retrieval algorithm for minimum-phase signals using the annihilating filter," vol. 11, no. 2-3, pp. 165-193, **Special issue on Sampling Theory and Applications**, *Sampling Theory in Signal and Image Processing journal*, 2012.
49. R. Nayak and C. S. Seelamantula, "Optimal sparsifying bases for frequency-domain optical-coherence tomography," *Optics Letters*, vol. 37, issue 23, pp. 4907-4909, 2012.
50. C. S. Seelamantula, N. Pavillon, C. Depeursinge, and M. Unser, "Local demodulation of holograms using the Riesz transform with application to microscopy," *Journal of Optical Society of America (A)*, vol. 29, issue 10, pp. 2118-2129, 2012.
51. A. Venkitaraman and C. S. Seelamantula, "A technique to compute smooth amplitude, phase, and frequency modulations from the analytic signal," *IEEE Signal Processing Letters*, vol. 19, no. 10, pp. 623-626, October 2012.
52. S. R. Krishnan, C. S. Seelamantula, A. Bouwens, M. Leutenegger, and T. Lasser, "A zero-crossing approach to high-resolution reconstruction in frequency-domain optical-coherence tomography," *Journal of Optical Society of America (A)*, vol. 29, issue 10, pp. 2080-2091, 2012.
53. H. Sundar, C. S. Seelamantula, and T. V. Sreenivas, "A mixture model approach for formant tracking and the robustness of Student's-t distribution," *IEEE Transactions on Audio, Speech, and Language Processing*, vol. 20, no. 10, pp. 2626-2636, 2012.
54. R. Delgado-Gonzalo, P. Thévenaz, C. S. Seelamantula, and M. Unser, "Snakes with an ellipse-reproducing property," *IEEE Transactions on Image Processing*, vol. 21, no. 3, pp. 1258-1271, March 2012.
55. C. S. Seelamantula, N. Pavillon, C. Depeursinge, and M. Unser, "Exact complex wave reconstruction in digital holography," *Journal of the Optical Society of America A*, vol. 28, no. 6, pp. 983-992, June 2011. This article also featured in the **Editor-in-Chief's choice** and was selected for additional publication in the virtual journal for biomedical optics (VJBO). This article featured among the most downloaded articles in *Holography of the Optical Society of America publishing*.
56. T. Binzoni, C. S. Seelamantula, and D. Van De Ville, "A fast time-domain algorithm for the assessment of tissue blood flow in laser-Doppler flowmetry," *Physics in Medicine and Biology*, vol. 55, pp. N383-N394, June 2010.
57. N. Ducros, A. Da Silva, J-M. Dinten, C. S. Seelamantula, M. Unser, and F. Peyrin, "A time-domain wavelet-based approach for fluorescence diffuse optical tomography," *Medical Physics*, vol. 37, no. 6, pp. 2890-2900, June 2010.
58. C. S. Seelamantula and M. Unser, "Performance analysis of reconstruction techniques for frequency-domain optical-coherence tomography," *IEEE Transactions on Signal Processing*, vol. 58, no. 3, pp. 1947-1951, March 2010.
59. N. Pavillon, C. S. Seelamantula, J. Kühn, M. Unser, and C. Depeursinge, "Suppression of the zero-order term in off-axis digital holography through nonlinear filtering," **Special issue on Digital Holography**, *Applied Optics*, 48, pp. H186-H195, December 2009. This article also featured in the **Editor-in-Chief's choice** and was selected for additional publication in *The Virtual Journal for Biomedical Optics*, vol. 5, issue no. 1, January 5, 2010.

60. S. Nair, R. Balakrishnan, C. S. Seelamantula, and R. Sukumar, "Vocalizations of wild Asian elephants (*Elephas maximus*): Structural classification and social context," *Journal of Acoustic Society of America*, vol. 126, no. 5, pp. 2768-2778, Nov. 2009.
61. C. S. Seelamantula and T. V. Sreenivas, "Blocking artifacts in speech/audio — Dynamic auditory perception and time-frequency filtering," *Signal processing*, vol. 89, no. 4, pp. 523-531, April 2009.
62. C. S. Seelamantula and M. Unser, "A generalized sampling method for finite-rate-of-innovation-signal reconstruction," *IEEE Signal Processing Letters*, vol. 15, pp. 813-816, 2008.
63. C. S. Seelamantula, A. H. Bachmann, M. L. Villiger, R. A. Leitgeb, and M. Unser, "Exact and efficient signal reconstruction in frequency-domain optical-coherence tomography," *Journal of the Optical Society of America (A)*, vol. 25, no. 7, pp. 1762-1771, July 2008. This article has also been selected for publication (**Editor-in-Chief's choice**) in *The Virtual Journal for Biomedical Optics*, vol. 3, no. 8, August 18, 2008.
64. R. A. Leitgeb, R. Michaely, T. Lasser, and S. Chandra Sekhar, "Complex-ambiguity-free Fourier-domain optical-coherence tomography through transverse scanning," *Optics Letters*, vol. 32, no. 23, pp. 3453-3455, December 2007. This article has also been selected for publication (**Editor-in-Chief's choice**) in *The Virtual Journal for Biomedical Optics*, vol. 3, no. 1, January 29, 2008.
65. S. Chandra Sekhar and T. V. Sreenivas, "Signal-to-noise-ratio estimation based on higher-order moments," *Signal Processing*, vol. 86, no. 4, pp. 716-732, 2006.
66. S. Chandra Sekhar and T. V. Sreenivas, "Auditory motivated level-crossing approach to instantaneous frequency estimation," *IEEE Transactions on Signal Processing*, vol. 53, no. 4, pp. 1450-1562, April 2005.
67. S. Chandra Sekhar and T. V. Sreenivas, "Effect of interpolation in the implementation of polynomial Wigner-Ville distribution for instantaneous frequency estimation," *Signal Processing*, vol. 84, issue 1, pp. 107-116, January 2004.
68. S. Chandra Sekhar and T. V. Sreenivas, "Adaptive window zero-crossing-based instantaneous frequency estimation," *EURASIP Journal of Applied Signal Processing*, **Special Issue on Non-linear Signal and Image Processing**, vol. 12, pp. 1791-1806, 2004.
69. S. Chandra Sekhar and T. V. Sreenivas, "Adaptive spectrogram Vs. adaptive pseudo Wigner-Ville distribution for instantaneous frequency estimation," *Signal Processing*, vol. 83, issue 7, pp. 1529-1543, July 2003.

Conference publications

1. S. Asokan and C. S. Seelamantula, "Spider GAN: Leveraging Friendly Neighbors to Accelerate GAN Training," Accepted to IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2023.
2. S. Asokan, F. S. Mohammed, and C. S. Seelamantula, "A game of snakes and GANs," To appear in Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), 2023.
3. A. J. Kamath and C. S. Seelamantula, "Multichannel time-encoding of finite-rate-of-innovation signals," To appear in Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), 2023.
4. K. K. R. Nareddy, S. Mache, P. K. Pokala, and C. S. Seelamantula, "An ensemble of proximal networks for sparse coding," Proc. IEEE International Conference on Image Processing (ICIP), 2022.
5. A. Kamath and C. S. Seelamantula, "Differentiate-and-fire time-encoding of finite-rate-of-innovation signals," in Proc. IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2022.
6. S. Asokan and C. S. Seelamantula, "Teaching a GAN what not to learn," Proceedings of Neural Information Processing Systems (NeurIPS), 2020.
7. P. K. Pokala, S. Chemudupati, and C. S. Seelamantula, "Generalized fast iteratively reweighted soft-thresholding algorithm for sparse coding under tight frames in the complex domain," Proceedings of IEEE International Conference on Image Processing (ICIP), 2020.
8. S. Srinath, S. Rudresh, C. S. Seelamantula, G. Hareesh, P. Murali Krishna, "Nyquist pulses for sub-Nyquist sampling — Application to underwater imaging," Proceedings of IEEE International Conference on Image Processing (ICIP), 2020.
9. P. K. Pokala and C. S. Seelamantula, "Project improved FISTA and application to image deblurring," Proceedings of IEEE International Conference on Image Processing (ICIP), 2020.
10. D. Jawali, P. K. Pokala, and C. S. Seelamantula, "CORNET: Composite regularized neural network for convolutional sparse coding," Proceedings of IEEE International Conference on Image Processing (ICIP), 2020.
11. S. Chemudupati, P. K. Pokala, and C. S. Seelamantula, "Non-convex optimization for sparse interferometric phase estimation," Proceedings of IEEE International Conference on Image Processing (ICIP), 2020.

12. V. Kishore, S. Mukherjee, and C. S. Seelamantula, "PhaseSense — Signal reconstruction from phase-only measurements via quadratic programming," Proceedings of International Conference on Signal Processing and Communications (SPCOM), Bangalore, July 20-23, 2020.
13. P. K. Pokala and C. S. Seelamantula, "Accelerated weighted l1 minimization for MRI reconstruction under tight frames in Complex-Domain," Proceedings of International Conference on Signal Processing and Communications (SPCOM), Bangalore, July 20-23, 2020.
14. V. Kishore and C. S. Seelamantula, "Wirtinger flow algorithms for phase retrieval from binary measurements," Proceedings of IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), 2020.
15. P. K. Pokala, P. K. Uttam, and C. S. Seelamantula, "ConFirmNet: Convolutional FirmNet and application to image denoising and inpainting," Proceedings of IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), 2020. **Invited paper to a special session on "Learning Based Inversion."**
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19. P. Kevin Raj, A. Manjunath, J.R. Harish Kumar, and C. S. Seelamantula, "Automatic classification of artery-vein from a single wavelength fundus image," Proceedings of IEEE International Symposium on Biomedical Imaging (ISBI), 2020.
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24. P. K. Pokala, A. G. Mahurkar, and C. S. Seelamantula, "FirmNet: A sparsity amplified deep network deep network for solving linear inverse problems," Proceedings of IEEE International Conference on Acoustics, Speech, and Signal Processing, 2019.
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31. A. G. Mahurkar, P. Pokala, and C. S. Seelamantula, "Iteratively reweighted beamforming for high-resolution ultrasound imaging," Proceedings of IEEE International Symposium on Biomedical Imaging 2019, April 8-11, 2019, Venice, Italy.
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39. A. De and C. S. Seelamantula, "Design of sampling kernels and sampling rates for two-dimensional finite-rate-of-innovation signals," Proceedings of IEEE International Conference on Image Processing (ICIP) 2018, October 7-10, 2018.
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45. B. A. Shenoy and C. S. Seelamantula, "Homomorphic deconvolution for quantitative phase microscopy," Focus on Microscopy 2018, March 25-28, 2018, Singapore.
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62. C. S. Seelamantula, "Phase-encoded speech spectrograms," Proceedings of Interspeech, San Francisco, United States, September 8-12, 2016.
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77. S. Mukherjee and C. S. Seelamantula, "Smoothing does not improve the convergence rate of LASSO," Proceedings of SPARS 2015.
78. A. Adiga, S. Mulleti, S. Prasad, and C. S. Seelamantula, "Two-dimensional FRI signal reconstruction using blind deconvolution," 11th International Conference on Sampling Theory and Applications (SampTA), Washington, United States, May 25-29, 2015.
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81. M. Venkatesh and C. S. Seelamantula, "Directional bilateral filters," Proceedings of the 40th IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Brisbane, April 19-24, 2015.
82. S. Mulleti and C. S. Seelamantula, "Periodic nonuniform sampling for FRI signals," Proceedings of the 40th IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Brisbane, April 19-24, 2015.
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86. S. Menon and C. S. Seelamantula, "Robust Savitzky-Golay filters," Proceedings of the 19th International Workshop on Digital Signal Processing, Hong Kong, August 20-23, 2014.
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97. B. Vishwanath and C. S. Seelamantula, "Cell tracking using particle filters and level sets," Proceedings of IEEE Region 10 Conference (TENCON), Xi'an, China, October 22-25, 2013.
98. S. V. Menon and C. S. Seelamantula, "SURE-optimal two-dimensional Savitzky-Golay filters for image denoising," Proceedings of IEEE International Conference on Image Processing (ICIP), Melbourne, September 15-18, 2013.
99. B. A. Shenoy, S. Mukherjee, and C. S. Seelamantula, "Phase retrieval for a class of 2-D signals characterized by first-order difference equations," Proceedings of IEEE International Conference on Image Processing (ICIP), Melbourne, September 15-18, 2013.
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101. J. K. Mogali, N. Nallapareddy, C. S. Seelamantula, and M. Unser, "A shape-template based two-stage corpus callosum segmentation technique for sagittal plane T1-weighted brain magnetic resonance images," Proceedings of IEEE International Conference on Image Processing (ICIP), Melbourne, September 15-18, 2013.
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