Abijith Jagannath Kamath

PhD Student, Department of Electrical Engineering,
Indian Institute of Science, Bengaluru, India 560 012
Email: abijithj@iisc.ac.in — Webpage: kamath-abhijith.github.io

EDUCATION

Indian Institute of Science (IISc.), Bengaluru, India — 2020 – present
PhD in Electrical Engineering — CGPA: 8.90/10
Thesis Title: Neuromorphic Sampling — Theory and Algorithms

Selected Coursework: Time-Frequency Analysis, Convex Optimisation and Applications, Digital Image Processing, Stochastic Models and Applications, Pattern Recognition and Neural Networks

National Institute of Technology Karnataka (NITK), Surathkal, India — 2015 – 2019
Bachelor of Technology: Electrical and Electronics Engineering — CGPA: 9.17/10
Thesis Title: Signals, Shapes and Fourier Descriptors

Selected Coursework: Matrix Theory and Stochastic Processes, Digital Signal Processing, Information Theory

WORK EXPERIENCE

Indian Institute of Science
Project Assistant — 2019

- Project title: Neuromorphic Sampling
- Funding agencies: Pratiksha Trust, Institute of Eminence *(IoE)* Fund

ACTIVITIES AND RECOGNITIONS

- Awards
  - Recipient of the *Prime Minister's Research Fellowship*
- Professional Activities (selected)
  - *Vice-Chair*, IEEE IISc. *SPS* Student Chapter — 2020 – 21
  - *Student Branch Secretary*, IEEE NITK Student Branch — 2018 – 19
- Refereed Publications
  - Asilomar Conference on Signals, Systems and Computers
  - Int. Conf. Acoustics, Speech, Signal Process. (ICASSP)
  - Int. Conf. Sampling Theory and Applications (SampTA)
  - Elsevier Signal Processing

TEACHING

Teaching Assistant at IISc.

- E9 213 Time-Frequency Analysis — 2021 – 23
- E9 241-O Digital Image Processing — 2022 – 23
- E9 222 Signal Processing in Practice — 2023

Teaching Assistant at NITK

- EE 313/386 Digital Signal Processing — 2021 – 22
- EE 343 Statistical Foundations for Electrical Engineers — 2021 – 23
- EE 143 Mathematics for Electrical Engineers — 2019

REFERENCES

Prof. Chandra Sekhar Seelamantula
Professor, Department of Electrical Engineering, IISc.
E-mail: css@iisc.ac.in — Scholar Profiles: Webpage — Google Scholar

Dr CMC Krishnan
Assistant Professor, Department of Electrical and Electronics Engineering, NITK
E-mail: cmckrishnan@nitk.edu.in — Scholar Profiles: Google Scholar

PUBLICATIONS

Preprints

4. K. K. R. Nareddy, **A. J. Kamath**, and C. S. Seelamantula, "Tight-frame-like sparse recovery using non-tight sensing matrices," 2023, [Online]. Available: `https://arxiv.org/abs/2307.10862`

3. **A. J. Kamath** and C. S. Seelamantula, "Neuromorphic sampling of sparse signals," 2023, [Online]. Available: `https://arxiv.org/abs/2310.15750`

2. **A. J. Kamath** and C. S. Seelamantula, "Neuromorphic sampling of signals in shift-invariant spaces," 2023, [Online]. Available: `https://arxiv.org/abs/2306.05103`

1. **A. J. Kamath**, S. Rudresh, and C. S. Seelamantula, "Time encoding of finite-rate-of-innovation signals," 2021, [Online]. Available: `https://arxiv.org/abs/2107.03344`

Conference Articles

7. **A. J. Kamath** and C. S. Seelamantula, "Neuromorphic sensing meets unlimited sampling," in *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process. (ICASSP)*, 2024

6. K. K. R. Nareddy, **A. J. Kamath**, and C. S. Seelamantula, "Image restoration with generalized L_2 loss and convergent plug-and-play prior," in *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process. (ICASSP)*, 2024

5. A. S. Bhandiwad, **A. J. Kamath**, Asokan S., *et al.*, "Variational analysis of adversarial regularization for solving inverse problems," in *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process. (ICASSP)*, 2024

4. **A. J. Kamath** and C. S. Seelamantula, "Multichannel time-encoding of finite-rate-of-innovation signals," in *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process. (ICASSP)*, 2023. DOI: `10.1109/ICASSP49357.2023.10096150`

3. **A. J. Kamath** and C. S. Seelamantula, "Differentiate-and-fire time-encoding of finite-rate-of-innovation signals," in *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process. (ICASSP)*, 2022. DOI: `10.1109/ICASSP43922.2022.9746159`

2. S. Rudresh, **A. J. Kamath**, and C. S. Seelamantula, "A time-based sampling framework for finite-rate-of-innovation signals," in *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process. (ICASSP)*, 2020. DOI: `10.1109/ICASSP40776.2020.9053120`

1. **A. J. Kamath**, S. Rudresh, and C. S. Seelamantula, "FRI modelling of Fourier descriptors," in *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process. (ICASSP)*, 2019. DOI: `10.1109/ICASSP.2019.8682685`

Invited Talks

1. **A. J. Kamath** and C. S. Seelamantula, "Neuromorphic sampling," in *Asilomar Conf. Signals Syst. Comput. (ACSSCS)*, 2021