
EDUCATION

- **College of Engineering, Trivandrum** Kerala, India
Bachelor of Technology in Electronics & Communication Engineering 1990 – 1994
- **Indian Institute of Science** Bangalore, India
Master of Engineering in Signal Processing 1998 – 2000
- **Indian Institute of Science** Bangalore, India
Ph. D. 2004 – 2010
Thesis: MDCT Domain Enhancements for Audio Processing
Advisor: T. V. Sreenivas

PROFESSIONAL EXPERIENCE

- **Government Engineering College, Idukki** Kerala, India
Principal 2023-2024
- **Government Engineering College, Wayanad** Kerala, India
Professor 2015-2016, 2021-23
- **Government Engineering College, Barton Hill, Trivandrum** Kerala, India
Professor 2019 – 2021
- **College of Engineering, Thiruvananthapuram** Kerala, India
Assistant Professor, Associate Professor 1995 – 1996, 1998 – 2000, 2008 – 2014, 2016 – 2019
- **Government Engineering College, Idukki** Kerala, India
Associate Professor 2014 – 2015
- **Government College of Engineering, Kannur** Kerala, India
Associate Professor 2002 – 2008
- **Government Engineering College, Thrissur** Kerala, India
Assistant Professor 1996 – 1998

INTERNSHIPS

- **Ilmenau University of Technology** Ilmenau, Germany
Visiting Scientist May - June, 2017

PHD THESIS GUIDANCE

1. "Development of Deep Learning Framework for Video Analytics", by Reshmi S Bhooshan, Successfully defended Thesis on 13/11/2022
2. "Deep Learning Methods for Automatic Identification of Environmental Sounds and Acoustic Scenes", by Aswathy Madhu, successfully defended on 16/02/2023

LIST OF PUBLICATIONS

• Journals:

1. Ambily N.and Suresh K., "MRI segmentation using deep learning network for brain tumour detection", International Journal of Biomedical Engineering and Technology 2023 43:4, 378-389
2. Reshmi. S. Bhooshan and Suresh. K., "Image Caption Generation Using Visual Attention Prediction And Contextual Spatial Relation Extraction" Accepted for publication in Journal of Big Data.
3. Aswathy Madhu, Suresh K., "RQNet: Residual Quaternion CNN for Performance Enhancement in Low Complexity and Device Robust Acoustic Scene Classification", Accepted for Publication in the IEEE Transactions on Multimedia.

4. Reshmi. S. Bhooshan and Suresh. K., "A Multimodal Framework for Video Caption Generation," in IEEE Access, vol. 10, pp. 92166-92176, 2022, doi: 10.1109/ACCESS.2022.3202526.
5. Aswathy Madhu, Suresh, K. AtResNet: Residual Atrous CNN with Multi-scale Feature Representation for Low Complexity Acoustic Scene Classification. Circuits Syst Signal Process (2022). <https://doi.org/10.1007/s00034-022-02107-2>
6. Aswathy Madhu, , Suresh K., EnvGAN: a GAN-based augmentation to improve environmental sound classification, Artificial Intelligence Review (2022). <https://doi.org/10.1007/s10462-022-10153-0>
7. Reshmi Sasibhooshan, Suresh Kumaraswamy, Santhoshkumar Sasidharan, WavNet — Visual saliency detection using Discrete Wavelet Convolutional Neural Network, in Journal of Visual Communication and Image Representation, Volume 79, 2021, 103236,ISSN 1047-3203, <https://doi.org/10.1016/j.jvcir.2021.103236>.
8. K. Suresh and T. V. Sreenivas, Linear Filtering in DCT IV/DST IV and MDCT/MDST Domain , Signal Processing, Volume 89 Issue 6, Pages 1081-1089 ,June, 2009.
9. K. Suresh and T. V. Sreenivas, Block Convolution Using Discrete Trigonometric Transforms and Discrete Fourier Transform, in IEEE Signal Processing Letters, vol. 15, pp. 469-472, 2008.doi: 10.1109/LSP.2008.923789

• **Conferences:**

1. Ambily N and Suresh K., "3D Brain MRI Segmentation using Deep Neural Network," 2023 International Conference on Control, Communication and Computing (ICCC), Thiruvananthapuram, India, 2023, pp. 1-5, doi: 10.1109/ICCC57789.2023.10165167.
2. Bhooshan, Reshmi S., Suresh, K. (2023). Automated Surveillance Video Analysis with Textual Descriptions. In: Tuba, M., Akashe, S., Joshi, A. (eds) ICT Systems and Sustainability. Lecture Notes in Networks and Systems, vol 516. Springer, Singapore. https://doi.org/10.1007/978-981-19-5221-0_34
3. Aswathy Madhu and Suresh K., "EHTNet: Twin-pooled CNN with Empirical Mode Decomposition and Hilbert Spectrum for Acoustic Scene Classification," 2022 IEEE International Conference on Signal Processing and Communications (SPCOM), 2022, pp. 1-5, doi: 10.1109/SPCOM55316.2022.9840514.
4. Aswathy Madhu and Suresh K., "SiamNet: Siamese CNN Based Similarity Model for Adversarially Generated Environmental Sounds," 2021 IEEE 31st International Workshop on Machine Learning for Signal Processing (MLSP), 2021, pp. 1-6, doi: 10.1109/MLSP52302.2021.9596435.
5. Reshmi S. Bhooshan and Suresh K., "An Attention Based Wavelet Convolutional Model for Visual Saliency Detection," ICASSP 2021 - 2021 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2021, pp. 2240-2244, doi: 10.1109/ICASSP39728.2021.9413755.
6. Jazir S, P. A. Haris and Suresh K., "Efficient Channel Estimation of Massive MIMO Systems using Artificial Bee Colony Algorithm," 2020 IEEE Recent Advances in Intelligent Computational Systems (RAICS), 2020, pp. 190-194, doi: 10.1109/RAICS51191.2020.9332486.
7. N. Ambily and K. Suresh, "Classification of Brain MRI Images Using Convolution Neural Network and Transfer Learning," 2020 11th International Conference on Computing, Communication and Networking Technologies (ICCCNT), 2020, pp. 1-6, doi: 10.1109/ICCCNT49239.2020.9225504.
8. Aswathy Madhu and Suresh Kumaraswamy, "Data Augmentation Using Generative Adversarial Network for Environmental Sound Classification," 2019 27th European Signal Processing Conference (EUSIPCO), A Coruna, Spain, 2019, pp. 1-5, doi: 10.23919/EUSIPCO.2019.8902819.
9. E. Sabu and K. Suresh, "Object Detection from Video Using Temporal Convolutional Network," 2018 IEEE Recent Advances in Intelligent Computational Systems (RAICS), Thiruvananthapuram, India, 2018, pp. 11-15, doi: 10.1109/RAICS.2018.8635089.
10. N. Davis and K. Suresh, "Environmental Sound Classification Using Deep Convolutional Neural Networks and Data Augmentation," 2018 IEEE Recent Advances in Intelligent Computational Systems (RAICS), Thiruvananthapuram, India, 2018, pp. 41-45, doi: 10.1109/RAICS.2018.8635051.
11. S. S. Shankar, L. Thomas, H. Pratheesh and K. Suresh, "Burning Zone Temperature Estimation of Rotary Kiln Using Flame Image Analysis in Cement Plants," 2018 International CET Conference on Control, Communication, and Computing (IC4), Thiruvananthapuram, 2018, pp. 255-259, doi: 10.1109/CETIC4.2018.8531041.
12. K. Suresh and R. A. Raj, "MDCT domain parametric stereo audio coding," 2012 International Conference on Signal Processing and Communications (SPCOM), Bangalore, 2012, pp. 1-4, doi: 10.1109/SPCOM.2012.6290038.
13. P. L. Deepa and K. Suresh, "An optimized feature set for music genre classification based on Support Vector Machine," 2011 IEEE Recent Advances in Intelligent Computational Systems, Trivandrum, Kerala, 2011, pp. 610-614, doi: 10.1109/RAICS.2011.6069383.

14. K. Suresh and T. V. Sreenivas, "Parametric stereo coder with only MDCT domain computations," 2009 IEEE International Symposium on Signal Processing and Information Technology (ISSPIT), Ajman, 2009, pp. 61-64, doi: 10.1109/ISSPIT.2009.5407482.
15. S. Nithin, K. Suresh and T. V. Sreenivas, "Low Complexity Bit Allocation Algorithms for MP3/AAC Encoding" *Audio Engineering Society 124th convention*, New York, May 2008, preprint 7339.
16. K.Suresh and T. V. Sreenivas, "Linear Filtering in MDCT Domain" , *Audio Engineering Society 124th convention*, Amsterdam, May 2008, preprint 7340.
17. K. Suresh and T. V. Sreenivas, "Direct MDCT Domain Psychoacoustic Modeling," 2007 IEEE International Symposium on Signal Processing and Information Technology, Giza, 2007, pp. 742-747, doi: 10.1109/ISSPIT.2007.4458108.
18. K. Suresh and T. V. Sreenivas, "MDCT Domain Analysis and Synthesis of Reverberation for Parametric Stereo Audio", *Audio Engineering Society 123rd convention*, New York, October 2007, preprint 7281.
19. Suresh K and Ramakrishnan, A. G. "A DCT based approach to Estimation of Pitch." Proceedings of ICMPIS (2000).

PROFESSIONAL ACTIVITIES

- Senior Member of IEEE
- Volunteered as Chair, IEEE Signal Processing Society, Kerala Chapter (2018-2020)

ADDITIONAL CHARGE

Held Full Additional Charge of Principal, Govt. Engineering College, Barton Hill from 07/03/2019 to 27/08/2020