

# Dr. Baiju P. S.

Assistant Professor, Dept. of Electronics & Communication Engg.

LBS Institute of Technology for Women, Trivandrum

Email: [psbaiju@lbsitw.ac.in](mailto:psbaiju@lbsitw.ac.in)



Phone : +91 9895016065

Institute website: [https://lbt.ac.in/lbt\\_ece\\_faculty/#teaching\\_faculty](https://lbt.ac.in/lbt_ece_faculty/#teaching_faculty)

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## KEYWORDS RELATED TO THE RESEARCH AREA

Signal Processing, Image and Video Processing, Computer Vision, Machine Learning, Deep Learning, Compressed Sensing, Data Science and Artificial Intelligence.

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## EDUCATION

- **National Institute of Technology (NIT), Calicut** July 2017 – April 2021  
*Ph.D in Electronics & Communication Engineering.*
- **College of Engineering Trivandrum (CET)** Aug. 2011 – Aug. 2013  
*Master of Technology in Signal Processing.*
- **TKM College of Engineering, Kollam** Sept. 2001 – July. 2005  
*Bachelor of Technology in Electronics & Communication*

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## RESEARCH

- **Ph.D** NIT, Calicut  
*Research Supervisor: Dr. Sudhish N. George, Associate Professor, NIT*      **Thesis Defence: 12 April 2021**
  - **Thesis Title:** Design and Development of Deweathering Schemes for Challenging Climatic Conditions
  - **Problem Statement:** To design and implement algorithms for deweathering of outdoor images and videos captured in various bad wather conditions such as rain, haze, fog and low light.
  - **Research Publications**
    1. **Baiju P. S.**, Deepak Jayan P., Sudhish N. George, “Tensor Total Variation Regularised Low Rank Approximation Framework for Video Deraining”, *IET Image Processing*, ISSN: 1751-9659, 2020, vol. 14, issue 14, pp:3602-3612.
    2. **Baiju P. S.**, Sudhish N. George, “An Automated Unified Framework for Video Deraining and Simultaneous Moving Object Detection in Surveillance Environments”, *IEEE Access*, DOI: 10.1109/ACCESS.2020.3008903, vol. 8, July, 2020.
    3. **Baiju P. S.**, Sudhish N. George, “  $l_{1/2}$  regularized joint low rank and sparse recovery technique for illumination map estimation in low light image enhancement”, *Journal of Ambient Intelligence and Humanized Computing*, Springer, DOI: 10.1007/s12652-021-02947-x, February, 2021.
    4. **Baiju P. S.**, Sherin Lisa Antony, Sudhish N. George, “An intelligent framework for transmission map estimation in image dehazing using total variation regularized low-rank approximation”, *The Visual Computer*, Springer, DOI: 10.1007/s00371-021-02117-2, March, 2021.
    5. **Baiju P. S.**, Sudhish N. George, “TTV Regularized LRTA Technique for the Estimation of Haze Model Parameters in Video Dehazing”, *ACM Transactions on Multimedia Computing, Communications and Applications*, DOI: 10.1145/3465454, vol 18, No. 1, Article 4, 2022.
  - **Conferences**
    1. **Baiju P. S.**, Deepak Jayan P., Sudhish N. George, “Weighted Nuclear Norm and TV Regularization based Image Deraining”, in *IEEE National Conference on Communications (NCC 2018)*, pp: 1-6, IIT Hyderabad, India, 2018.

## WORKSHOPS/FACULTY DEVELOPMENT PROGRAMMES ATTENDED

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1. Induction Training programme for Faculty at LBS College of Engineering, Kasaragod. (2008)
2. SDP on Communication, network, and Information Security at LBS Institute of Technology for Women, Trivandrum (2008)
3. STP on “Recent Trends in optical & wireless communication systems” at SCTCE. (2008)
4. Two day workshop on “PCB Manufacturing Machine”, LBS Institute of Technology for Women , Trivandrum. (2013)
5. STP on “Applications of Linear Algebra”, LBS Institute of Technology for Women, Trivandrum. (2013)
6. FDP on “Signal Processing for Biomedical Applications”, M.E.S College of Engineering , Kuttipuram. (2015)
7. Short Term Course on “Automatic Control Systems Engineering with MATLAB/SIMULINK”, Indian Institute of Space Science and Technology , Valiamala, Thiruvananthapuram. (2016)
8. FDP on “Short Course on “Cooperative 4G/5G MIMO Wireless Communication”, Indian Institute of Technology , Kanpur. (2016)
9. FDP on “Advanced DSP Design Techniques”, Indian Institute of Technology , Kharagpur. (2016)
10. FDP on “Pedagogical Skills”, Indian Institute of Technology , Madras. (2016)
11. Short Course on “Writing Academic Publication”, Indian Institute of Technology, Gandhinagar. (2017)
12. Online FDP on “Recent Research Trends in Control, Instrumentation and Allied Engineering: A Multidisciplinary Approach”, NIT Silchar. (2020)
13. Online FDP on “Research Trends in Optics, Photonics and Nano Technology”, LBS Institute of Technology for Women, Trivandrum. (2020)
14. Online FDP on “Electromagnetics and Antenna Techology”, LBS Institute of Technology for Women, Trivandrum. (2020)
15. Online FDP on “Recent Advancements in image processing and Computer Vision”, LBS Institute of Technology for Women, Trivandrum. (2021)
16. Online FDP on ‘Deep learning for image and Video Applications”, LBS College of Engineering, Kasaragod. (2021)
17. Online Training programme on “Outcome Based Education and NBA Accreditation process”, LBS Institute of Technology for Women, Trivandrum. (2021)

## TECHNICAL TOOLS AND SKILLS

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1. Efficient coding skills in softwares such as C, C++, Git, Python (numpy, scikit-learn, TensorFlow, keras), Matlab
2. Proficiency in software implementations at a product level using computer vision/machine learning tools such as OpenCV
3. Knowledge & know-how in computer vision (detection, segmentation, classification/recognition, detection, real-time image processing, etc.)
4. Knowledge & know-how in digital signal processing

## MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

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1. Member of Institute of Electrical and Electronics Engineers (IEEE)
2. Member of Association for Computing Machinery (ACM)

## TEACHING EXPERIENCE

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1. Assistant professor in Dept. of Electronics & Communication, LBSITW from 2008 till date.

## IMPORTANT ASSIGNMENTS

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- 2008–2010, Staff Advisor, ECE batch
- 2014–2015, Union Staff Advisor
- 2020–till date, PTA Treasurer
- 2020–till date, Dean (Research & Consultancy)
- 2020–till date, Member - Collge Council
- 2021–2025, Staff Advisor, AE & I batch
- 2023, Organizing Chair, National Conference, NCACSI-2023

## DECLARATION

I here by declare the the above furnished information is true to the best of my knowledge

Place: Trivandrum



Dr. Baiju P. S.