

## Dr. Rajeshwari B.S

Affiliation (Assistant Professor, Department of Electronics and Instrumentation Engineering, SIT)

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### Education

	Degree	Year	Institute	Specialization
1	BE	1997	Siddaganga Institute of Technology, Tumkur.	Instrumentation and Electronics.
2	MTech.	2010	Siddaganga Institute of Technology, Tumkur.	Signal Processing
3	PhD.	2023	IIT Kharagpur	Biomedical Signal processing (Phonocardiogram Analysis for Cardiovascular detection)

### Professional Experience

	Date (from-to)	Designation	Organization
1	2010-till data	Assistant Professor	Siddaganga Institute of Technology
2	2000-2005	Quality Analyst	Unilog Content Solutions
3			

*(Please fill in reverse order. Current designation should be at the top)*

### Positions held

*(Please give details of any administrative posts, co Ordinator roles/ responsibilities held)*

### Affiliations of Professional organizations

- Instrument Society of India
- Institution of Engineers

#### Awards and Honors

- Best paper award at National Conference on Communication and network security held in RVCE Bangalore for the paper titled, "Estimating Mixing Parameters From Multispeaker Data Using Excitation Information" on May 2010.

#### Courses Taught

##### Undergraduate Courses

- Mathematical Tools for Signal Processing
- Signals and Systems.
- Linear Integrated circuits.
- Electronic Measurements.
- Transducers and applications
- Internet of Things.
- Digital Signal Processing.
- Digital Image processing,
- Foundation of Machine Learning.
- Python Programming
- ARM Microcontroller (ARM7-LPC2148)

##### Postgraduate Courses

- ARM Microcontroller and its applications (ARM Cortex M3=LPC1768)
- Design of IoT System

#### Research Guidance

Sl. no	Name of the Scholar	Title	Year of completion
	NIL		

#### Research Areas

- Signal Processing (Speech, Image, Biomedical signal processing)
- Machine Learning, Deep Learning, Explainable AI (XAI) for diagnosis.

## Sponsored Projects

NIL

## Publications

### Journals

- **Rajeshwari B.S.**, M. Patra, A. Sinha, A. Sengupta and N. Ghosh, "Detection of Phonocardiogram Event Patterns in Mitral Valve Prolapse: An Automated Clinically Relevant Explainable Diagnostic Framework," in **IEEE Transactions on Instrumentation and Measurement**, vol. 72, pp. 1-9, 2023, Conference Proceedings
- **Rajeshwari B.S.** and Lavanya K, "Extraction of Nuclei of White blood cell from microscopic cell image", **Journal of Instrumentation Society of India (ISOI)**, Vol.46, No.4, pp 165-167. Dec 2016.

### Conferences

- **Rajeshwari B.S.** and N. Ghosh, "Classification of Valvular Diseases using Phonocardiogram without Segmentation and Gammatone Filters," 2023 International Conference on Smart Systems for applications in Electrical Sciences (ICSSSES), Tumakuru, India, 2023, pp. 1-5
- **Rajeshwari B.S.**, A. Sinha, A. Sengupta, D. Jahnvi, N. Ghosh and A. Patra, "Detection of Twin Pregnancies using Fetal Phonocardiogram," 2023 45th Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC), Sydney, Australia, 2023, pp. 1-4.
- **B. S. Rajeshwari**, B. Harshitha, N. N. Chandan, S. D. Pavan Babu and G. Mahalakshmi, "Heart Rate Estimation using Mobile Seismocardiogram (m-SCG)," 2024 International Conference on Smart Systems for applications in Electrical Sciences (ICSSSES), Tumakuru, India, 2024, pp. 1-4
- Dhaladhuli Jahnvi; Ashutosh Dash; **Rajeshwari Bs**; Nirmalya Ghosh; Amit Patra; K M Mandana., "Non-invasive Coronary Artery Disease Screening Based on Electrocardiogram Characteristics and Clinical Risk Factors," 2023 45th Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC), Sydney, Australia, 2023, pp. 1-4,
- M. Nischitha and **B. S. Rajeshwari**, "Solar Powered IoT based Environment Monitoring System," 2023 9th International Conference on Signal Processing and Communication (ICSC), NOIDA, India, 2023, pp. 469-472,
- **Rajeshwari, B. S.**, Aman Sinha, Arnab Sengupta, Madhurima Patra, Karuna P. Sahoo, and Nirmalya Ghosh. "Synchrosqueezed Transform based Click Event Segmentation in Phonocardiogram of Mitral Valve Prolapse." In 2022

*44th Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC)*, pp. 1997-2000. IEEE, 2022

- **Rajeshwari, B. S.**, Aman Sinha, Arnab Sengupta and Nirmalya Ghosh., "Estimation of Cardiocogram.", *International Conference on Futuristic Technologies (INCOFT)*, Karnataka, India. Nov 25-27, 2022
- Patra, Madhurima, **Rajeshwari BS**, Arnab Sengupta, Amit Patra, and Nirmalya Ghosh. "Wavelet based event detection in the phonocardiogram of prolapsed mitral valve." In *2021 43rd Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC)*, pp. 841-844. IEEE, 2021.
- Deexith V, **Rajeshwari B.S.**, "Android 7.1.2 porting on Magik2 board based on I.MX6 processor.", International conference *Science globe in association with IRAJ research forum*, Bengaluru, 10th June 2018
- Monika, **Rajeshwari B.S.**, "Android 5.0 porting on Magik2 based on iMX6 quad core processor", International conference, NMIT, Nitte, Udupi District, 12th May 2017.
- **Rajeshwari B.S** and R.Kumaraswamy, "Estimating Mixing Parameters From Multispeaker Data Using Excitation Information", in Proc. of National Conference on Communication and network security, May 2010, RVCE, pp175- 179, Bangalore. 14
- **Rajeshwari B.S** and R. Kumaraswamy, "Blind source separation of multispeaker data using source specific information", in Proc. Of National conference on recent advances in Electronics and Communication Engineering, Mar 2010 NHCE, Bangalore
- **Rajeshwari B.S**, Kumaraswamy. R, "Speech Enhancement in Multispeaker Environment using Speech-specific Information", *Proceedings of International Conference on Emerging Research in Computing, Information, Communication and Applications (ERCICA-13)*, Aug. 1-4, 2014.
- Book Chapters  
NIL