

**Dr. Minu A. Pillai**

Assistant Professor (Contract)  
 Department of Instrumentation  
 Cochin University of Science and Technology  
 Kochi, Kerala-682022  
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**Permanent Address**

Padinjare Veedu  
 Near NSS Union Buildings  
 Pathanamthitta  
 Kerala-689645

**Field of Specialization:**

Piezoelectric Energy Harvesting, Acoustic Energy Harvesting, Acoustic Source Localization using machine learning, Signal Processing and Instrumentation

**Education qualifications (Starting with the highest degree)**

Degree Obtained	Specialization	Name of the University/Board	Year of Passing	% of Marks/ CGPA	Class/ Division
Doctoral (Ph.D.)	Instrumentation	NIT Tiruchirappalli	2018	9.5 CGPA	-
Masters (M. Tech)	Process Control & Instrumentation	NIT Tiruchirappalli	2010	8.68 CGPA	First Class with Distinction
Graduate (B. Tech.)	Applied Electronics & Instrumentation	Mahatma Gandhi University, Kottayam	2007	76.87%	First Class with Distinction
Senior Secondary	Science + Mathematics	Mahatma Gandhi University, Kottayam	2001	75.16%	First Class
High School (SSLC)	Language + Social Sciences + Science + Mathematics	Kerala Board of Public Examinations	1999	91.5%	First Class with Distinction

**Post-Doctoral Details**

Research area	Acoustic Source Localization using machine learning
Date of Joining	08-11-2018
Department and Institution	Department of Electronics, Cochin University of Science and Technology, Kochi
Fellowship details	University Post Doctoral Fellowship
Name(s) of Mentor & Address	Dr. Supriya M. H. Professor & Head Department of Electronics Cochin University of Science and Technology Kochi Kerala-682022

### Ph.D. Degree Details

Ph.D. Thesis Title	Analysis and Design of Acoustic Energy Harvesters Using Duct Resonators and Piezoelectric Unimorphs
Research area of Ph.D. Thesis work	Acoustic Energy Harvesting
Date of the Award of Ph.D. Degree	28-07-2018
Name(s) of Supervisor(s) & Address	Dr. D.Ezhilarasi (Guide) Associate Professor Department of Instrumentation and Control Engineering National Institute of Technology Tiruchirappalli Tamilnadu-620015  Dr. D. D. Ebenezer (Co-Guide) Scientist H & Director (Systems) Naval Physical and Oceanographic Laboratory Kochi- 682021 India.

### Professional Experience

Department and Institute/Organization	Start Date	End Date	Duration	Designation	Nature of work
Dept. of Electronics, Cochin University of Science and Technology Kochi	08/11/2018	07/11/2021	3 years	Post-Doctoral Fellow	Research + Teaching
Dept. of Electrical Engineering, National Institute of Technology Calicut	09/07/2018	06/11/2018	4 months	Adhoc Faculty	Teaching
Dept. of Electronics and Instrumentation Engineering, Baselios Mathews II College of Engineering Sasthamcotta	10/08/2010	04/05/2012	1 year and 9 months	Assistant Professor	Teaching
Dept. of Electronics and Instrumentation Engineering, Baselios Mathews II College of Engineering Sasthamcotta	01/07/2010	09/08/2010	1 month	Lecturer	Teaching
Dept. of Electronics and Instrumentation Engineering, Baselios Mathews II College Of Engineering Sasthamcotta	15/02/2008	22/08/2008	6 months	Lecturer	Teaching

### Academic Achievements

Qualified GATE 2008 in Instrumentation with All India rank 197 and percentile score 94.93.
Received Academic Proficiency prize from National Institute of Technology Tiruchirappalli for securing third rank for M-Tech in Process Control and Instrumentation.

### Hands on experience

Modeling and simulation of structures using Finite Element software COMSOL
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MATLAB programming.
Keil micro vision 2 programming.
Python Programming

### Reviewer of Journals

IEEE Internet of Things Journal.
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### Membership in Professional Bodies

Life time member of Institute of Smart Structures and Systems (ISSS) [LM 668].
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### Papers published in International Journals

1. **Minu A. Pillai** and Ezhilarasi Deenadayalan (2014) A Review of Acoustic Energy Harvesting. *International Journal of Precision Engineering and Manufacturing*, Vol. 15, No. 5, pp.949-965, DOI: [10.1007/s12541-014-0422-x](https://doi.org/10.1007/s12541-014-0422-x). [Article received International Journal of Precision Engineering and Manufacturing Most Downloaded Article Award, 2014 from Springer]
2. **Minu A. Pillai** and Ezhilarasi Deenadayalan (2016) Improved acoustic energy harvester using tapered neck Helmholtz resonator and piezoelectric cantilever undergoing concurrent bending and twisting. *Procedia Engineering*, 144, pp. 674 – 681, DOI: <https://doi.org/10.1016/j.proeng.2016.05.065>.
3. **Minu A. Pillai**, D. D. Ebenezer and Ezhilarasi Deenadayalan (2017) Analytical model of mechanically excited piezoelectric unimorph beams. *The Journal of the Acoustical Society of America*, 142 (2), pp.718-727, DOI: <http://dx.doi.org/10.1121/1.4996852>.
4. **Minu A. Pillai**, D. D. Ebenezer and Ezhilarasi Deenadayalan (2017) Erratum: Analytical model of mechanically excited piezoelectric unimorph beams [J. Acoust. Soc. Am. 142(2), 718–727 (2017)] *The Journal of the Acoustical Society of America*, 142 (4), pp. 1871-1873, DOI: <https://doi.org/10.1121/1.5006060>.
5. **Minu A. Pillai**, D. D. Ebenezer and Ezhilarasi Deenadayalan (2018) Design and optimization of piezoelectric unimorph beams with distributed excitation. *The Journal of the Acoustical Society of America*, 143 (5), pp.2685-2696, DOI: <https://doi.org/10.1121/1.5034465>.
6. **Minu A. Pillai**, D. D. Ebenezer and Ezhilarasi Deenadayalan (2019) Transfer matrix analysis of a duct with gradually varying arbitrary cross-sectional area. *The Journal of the Acoustical Society of America*, 146 (6), pp. 4435-4445, DOI: <https://doi.org/10.1121/1.5139412>.

### Papers published in International Conference

1. **Minu A. Pillai**, Sridevi Veerasingam and Yaswanth Sai D. CAN Based Smart Sensor Network for Indoor Air Quality Monitoring, *Proceedings of 3rd IEEE International Conference on Computer Science and Information Technology (ICCSIT) 2010, China*, IEEE CS Press, pp. 456-460, ISBN No: 978-1-4244-5540-9, DOI: 10.1109/ICCSIT.2010.5564892.

2. **Minu A. Pillai**, Sridevi Veerasingam and Yaswanth Sai D. Implementation of Sensor Network for Indoor Air Quality Monitoring Using CAN Interface, *Proceedings of International Conference on Advances in Computer Engineering (ACE) 2010, Bangalore*, IEEE CS Press, pp. 366-370, DOI : 10.1109/ACE.2010.85.
3. Yaswanth Sai D., Sridevi Veerasingam and **Minu A. Pillai** Design of Sensor Node for synchronized TDMA Network, *Proceedings of International Conference on Control, Communication and Power Engineering (CCPE) 2010, Chennai*, pp. 349-351, ISBN: 978-1-62993-400-6.
4. **Minu A. Pillai** and Ezhilarasi Deenadayalan Acoustic energy harvesting using Helmholtz resonator with tapered neck. *Proceedings of COMSOL Conference -2013, Bangalore*, pp.1-4.
5. **Minu A Pillai**, Alwyn Ghosh, Jestin Joy, Suraj Kamal, Satheesh Chandran C, Arun A Balakrishnan and Supriya M. H. Acoustic Source Localization using Random Forest Regressor. *Proceedings of International Symposium on Ocean Technology SYMPOL 2019, Kochi*, pp.191-199, DOI: 10.1109/SYMPOL48207.2019.9005303.

#### **Short term Courses/Workshops attended**

1. Two months training in “Industrial Automation” from Technocrat Automation Solutions Pvt Ltd Chennai from 25 August 2007 to 24 October 2007.
2. Three day short term course on “Finite Element Method” organized by the Department of Civil Engineering, National Institute of Technology Tiruchirappalli on 21-23 March 2013.
3. CEP Course on “Introduction to Machine Learning and Deep Learning with applications to engineering systems” conducted under TEQIP III by IIT Bombay during February 23-25, 2019.
4. Five day short term training programme on "Data Science and Machine Learning using Python", sponsored by TEQIP-III and organized by Division of Information Technology, School of Engineering, Cochin University of Science and Technology in association with Department of Computer Science and Engineering, THDC Institute of Hydropower Engineering and Technology, Tehri, Uttarakhand from 3-7 August 2020 in online mode.
5. TEQIP III sponsored one week online Faculty Development Programme on “Recent Research Trends in Control, Instrumentation and Allied Engineering: A Multidisciplinary Approach (RRTCIA-2020)” held during 04th to 08th September 2020 in NIT Silchar.
6. One week Short Term Training Program on “Computational Software (MATLAB & MATHEMATICA)” organized by Applied Mathematics and Humanities Department (AMHD), Sardar Vallabhbhai National Institute of Technology (SVNIT), Surat during October 05–09, 2020 in online mode.
7. One-Week Online Faculty Development Programme on “Machine Learning and Artificial Intelligence” organized by E&ICT Academy IIT Guwahati held from 12 to 19 October, 2020 in

association with Maulana Mukhtar Ahmad Nadvi Technical Campus and support from Digital Shark Technology.

8. Online Faculty Development Programme on “Python for Artificial Intelligence and Machine Learning Applications” organized by Department of Computer Science and Engineering, NIT Warangal during 16-20 August 2021.
9. Pre-conference workshop on “Wireless Sensor Networks” held at Department of Instrumentation and Control Engineering, National Institute of Technology Tiruchirappalli on 6 December 2009.
10. One day workshop on “Polynomial Global Optimization and Constraint Propagation Techniques” held at Department of Instrumentation and Control Engineering, National Institute of Technology Tiruchirappalli on 17 December 2009.
11. Workshop on “Wireless Sensor Networks focus on ZigBee and Automotive Applications” conducted by Tifac-Core in Automotive Infotronics of VIT University, Vellore during 26-27 March 2010.
12. ISTE sponsored National workshop on “Guidelines to Publish Articles in International Peer Review Journal” conducted by the Department of Mechanical Engineering, Ponjesly College of Engineering, Nagercoil on 3 January 2014.
13. TEQIP sponsored workshop on “MEMS, its CAD tools and Smart Structures” organized by the Department of Instrumentation and Control Engineering, National Institute of Technology Tiruchirappalli during 5-9 January 2015.
14. Workshop on “Machine Learning” held during 13-15 December 2018 at Department of Electronics, Cochin University of Science and Technology.
15. Five day online workshop on “Machine Learning in Real Time Applications” organized by Department of Computer Science and Engineering, NIT Warangal during 24-28 August 2020.

### **Conferences attended**

1. Participated and presented in International Conference on Advances in Computer Engineering, (ACE) 2010 organized by Association of Computer Electronics and Electrical Engineers (ACEEE) at Bangalore during 21-22 June 2010.
2. Participated and presented in COMSOL Conference 2014 organized by Comsol India at Bangalore during 13-14 November 2014.
3. Participated in Seventh ISSS National Conference on MEMS, Smart Materials, Structures and Systems organized by ISSS at CUSAT, Kochi during 23-25 September 2015 as delegate.
4. Participated in Eighth International Symposium on Embedded Computing and System Design organized by Department of Electronics, Cochin University of Science and Technology, Kochi during 13-15 December 2018 as student organizer.

5. Participated and presented in 2019 International Symposium on Ocean Technology organized by Department of Electronics of Cochin University of Science and Technology, Kochi, Kerala during 11-13 December 2019.

### **Referees:**

- (i) Dr. D. D. Ebenezer  
Adjunct Faculty, Dept. Ship Technology, CUSAT, Kochi-682022  
Retired Scientist 'H' and Director (Systems), NPOL-DRDO, Kochi  
Mobile - 9446577239  
Email- [d.d.ebenezer@gmail.com](mailto:d.d.ebenezer@gmail.com)
- (ii) Dr. D. Ezhilarasi  
Associate Professor  
Department of Instrumentation and Control Engineering  
National Institute of Technology Tiruchirappalli  
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Mobile - 9444878908  
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- (iii) Dr. Supriya M. H.  
Professor & Head  
Department of Electronics  
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### **DECLARATION**

I, the undersigned, certify to the best of my knowledge and belief, this CV correctly describes me, my qualifications, and my experience. I understand that any wilful misstatement described herein may lead to my disqualification or dismissal, if engaged.

Date: 07-01-2022  
Place: Pathanamthitta



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