

# Veerababu Dharanalakota

#5-43, Sivalayam Street  
Prathipadu, East Godavari District  
Andhra Pradesh, India - 533432

✉ dveerababu@outlook.com  
☎ +91-7757889454

## EDUCATION

[Home Page](#); [Web Page](#)

- Jul 2015 – Oct 2020 **PhD in Acoustics, Indian Institute of Technology Hyderabad, India**  
Dept. of Mechanical and Aerospace Engineering  
Dissertation: Green's function approach to predict the acoustic performance of circular expansion chamber with concentric liners  
Cumulative GPA: 9.8/10
- Aug 2011 – Jun 2013 **ME in Acoustics, Indian Institute of Science, Bengaluru, India**  
Dept. of Mechanical Engineering  
Dissertation: Flow-acoustic analysis and design of multiply-connected automotive mufflers  
Cumulative GPA: 6.9/10 (First class)
- Sep 2007 – May 2011 **B. Tech in Mechanical Engineering**  
Jawaharlal Nehru Technological University, Kakinada, India  
Aggregated Percentage: 75.9 % (First class with Distinction)
- Jun 2005 – Apr 2007 **Intermediate**  
Board of Intermediate Education, Andhra Pradesh, India  
Aggregated Percentage: 95.2 % (A - Grade)
- Jun 2004 – Apr 2005 **Secondary School Certificate**  
Board of Secondary Education, Andhra Pradesh, India  
Percentage: 89.3 % (First class)

## RESEARCH EXPERIENCE

- Nov 2021 – Present **Postdoctoral Fellow, Indian Institute of Science, Bengaluru, India**  
Dept. of Electrical Engineering
- Modelling sound propagation using physics-based machine learning models
  - Multi-layer perceptrons (MLPs), Adaptive learning rate algorithms, Loss-based optimizer switching algorithms, Kolmogorov-Arnold Networks (KANs), Uncertainty quantification
- This research is jointly sponsored by the host institute and the ANRF, Govt. of India.
- Jul 2021 – Nov 2021 **Postdoctoral Fellow, Indian Institute of Technology Hyderabad, India**  
Dept. of Mechanical and Aerospace Engineering
- Theoretical modelling and simulation of sound propagation in the ducts
  - Developing scaling laws for the simulation and testing of ducted systems
  - Statistical energy analysis (SAE) for high frequency noise control
- This research is sponsored by the Alstom India, and Defence Research and Development Organization (India).

## INDUSTRIAL EXPERIENCE

- Jul 2013 – Jun 2015 **Assistant Manager (R&D), Bajaj Auto Limited, Pune, India**  
Noise, Vibration & Harshness (NVH) Division
- Aeroacoustic and vibroacoustic analysis of automotive components
  - Psychoacoustic analysis of vehicle noise to improve the noise signature
  - Failure analysis of structures due to vibrations
  - Analysis of prolonged exposure of human body to the vibrations

## PROFESSIONAL AFFILIATIONS

	Organization	Membership Type
1	Acoustical Society of India (ASI)	Life Member
2	American Institute of Aeronautics and Astronautics (AIAA)	Member

3	Institute of Noise Control Engineering - USA (INCE-USA)	Member
4	International Institute of Acoustics and Vibration (IIAV)	Member
5	Acoustical Society of America (ASA)	Member
6	Institute of Electrical and Electronics Engineers (IEEE)	Member
<b>Committee</b>		<b>Role</b>
1	ASA - Technical Committee on Computational Acoustics	Member
2	ASA – Engineering Acoustics	Member
3	ASA - International Liaison Committee	Member
4	IEEE – Signal Processing Society (SPS)	Member

## PROFESSIONAL SKILLS

<b>Programming Languages</b>	MATLAB, Mathematica, Python
<b>ML Frameworks</b>	TensorFlow, PyTorch
<b>Finite Element Methods</b>	Actran, COMSOL, Altair Hyperworks
<b>Signal Processing</b>	Pulse Reflex, Pulse LabShop
<b>CAD</b>	SolidWorks
<b>IT</b>	Microsoft Office, Latex, Zotero, WordFull

## HONORS AND AWARDS

	<b>Honor/Award</b>	<b>Organization</b>	<b>Year</b>
1	Young Acousticians Grant	International Union for Pure and Applied Physics (IUPAP), Australia	2023
2	International Travel Grant	Department of Science and Technology (DST), Govt. of India	2023
3	Best Paper Award	Acoustical Society of India	2023
4	International Students Grant	Acoustical Society of America (ASA)	2020
5	Certificate of Appreciation in Research	Indian Institute of Technology Hyderabad	2019
6	Young Professional Congress Attendance Grants	International Institute of Noise Control Engineering (I-INCE)	2018
7	Certificate of Research Excellence	Indian Institute of Technology Hyderabad	2018
8	Best Paper Award	Acoustical Society of India & All India Institute of Speech and Hearing, India	2014
9	Dr. B. R. Ambedkar Merit cum Means Scholarship	Jawaharlal Nehru Technological University Kakinada, India	2011
10	Scholarship of Excellence	Cincinnati Telugu Foundation & BREAD Society, India	2007
11	Certificate of Appreciation	Narayana Educational Institutions, India	2005
12	Certificate of Proficiency	Ministry of Non-Conventional Energy Sources, Govt. of India	2004
13	Certificate of Merit	Ramanujan Educational Society, India	2001-2003

## RESEARCH GRANTS

Jan 2025 – Jun 2026 **NVIDIA Academic Grant (~INR 16 Lakhs)**  
Development of Physics-based Machine Learning for Sound Propagation

## TALKS AND SEMINARS (Resource Person)

---

- 24<sup>th</sup>, 28 - 29 Dec 2021 **Short course on “Concepts on Computational Acoustics”**  
Indian Institute of Technology Hyderabad, India
- 26 Nov 2018 - 1 Dec 2018 **National Level Faculty Development Programme on “Noise and Vibration Control of Structures: Engineering Applications”**  
Jawaharlal Nehru Technological University, Kakinada, India
- 4 – 15 Jun 2018 **National Level Faculty Development Programme on “Noise, Acoustics, Vibration Control and Measurement in various Engineering Applications with hands-on sessions”**  
Jawaharlal Nehru Technological University, Kakinada, India

## FEATURE ARTICLES IN MAGAZINES

---

- “Physics-Informed Neural Networks for Plane Waves”, NOISE/NEW INTERNATIONAL, Vol. 33, Number 1, March 2025.

## OTHER PROFESSIONAL ENGAGEMENTS

---

- Reviewer – Noise Control Engineering Journal
- Reviewer – AIAA SciTech Forum
- Reviewer – Journal of Acoustical Society of America

## RESEARCH PROFILE IDs

---

<b>ORCID</b>	0000-0002-7696-2842
<b>SCOPUS</b>	57195638278
<b>ResearcherID</b>	NYT-4215-2025
<b>Google Scholar</b>	<a href="https://scholar.google.com/citations?user=9Xvj3uEAAAAJ&amp;hl=en">https://scholar.google.com/citations?user=9Xvj3uEAAAAJ&amp;hl=en</a>
<b>ResearchGate</b>	<a href="https://www.researchgate.net/profile/Veerababu-Dharanalakota?ev=hdr_xprf">https://www.researchgate.net/profile/Veerababu-Dharanalakota?ev=hdr_xprf</a>
<b>LinkedIn</b>	<a href="http://www.linkedin.com/in/veerababu-dharanalakota">www.linkedin.com/in/veerababu-dharanalakota</a>

## CODE REPOSITORIES RELEASED FOR PUBLIC USE

---

Repository	Type	Applications
<a href="https://github.com/d-veerababu/1d-helmholtz-pinn-solver.git">https://github.com/d-veerababu/1d-helmholtz-pinn-solver.git</a>	GitHub	Automobiles, Aerospace, Speech, HVAC
<a href="https://github.com/d-veerababu/1d-acoustics-meanflow-tempgradients-pinn.git">https://github.com/d-veerababu/1d-acoustics-meanflow-tempgradients-pinn.git</a>	GitHub	Aerospace, Heat Exchangers
<a href="https://github.com/d-veerababu/2d-acoustics-circle-pinn.git">https://github.com/d-veerababu/2d-acoustics-circle-pinn.git</a>	GitHub	Ultrasonics, Geophysics, Biomedical, Metamaterials
<a href="https://github.com/d-veerababu/1d-acoustics-meanflow-pinns.git">https://github.com/d-veerababu/1d-acoustics-meanflow-pinns.git</a>	GitHub	Metamaterials, Aviation, Speech
<a href="https://github.com/d-veerababu/1d-acoustics-tempgradients-pinn.git">https://github.com/d-veerababu/1d-acoustics-tempgradients-pinn.git</a>	GitHub	Aeroengines, Land-based Gas Turbines

## MENTORSHIP

---

Student/Staff Name	Position & Affiliation	Period
Atharva	BTech Student, KLE Technological University, Hubli, Karnataka	2025 - Present

Gautham Sivakumar	BTech Student, NIT Karnataka, Surathkal	2025 - Present
Akanksha Singh	Project Associate, IISc Bangalore	2024 - 2025
Sagnik De	BTech Student, Institute of Radio Physics and Electronics, University of Calcutta, Kolkata	2024 - 2025
Namra Quasim	BTech Student, RV College of Engineering, Bangalore	2023 - 2024
Pavan Kumar	MTech Student, IISc Bangalore	2023 - 2024
Ashwin Raikar	Project Associate, IISc Bangalore	2023 - 2024
Prayanak	BTech Student, Ramaiah Institute of Technology, Bengaluru	2022 - 2023
Pranav	BTech Student, NIT Karnataka, Surathkal	2022 - 2023
Utkarsh	BTech Student, NIT Kurukshetra, Haryana	2022 - 2023
C. Sachin	MTech Student, Vasavi College of Engineering, Hyderabad	2019 - 2020
Sahithi	BTech Student, Sreenidhi Institute of Science & Technology, Hyderabad	2018 - 2019

## PROFESSIONAL TRAININGS ATTENDED

- 21 – 25 Nov 2022 **COMSOL Multiphysics Intensive Online Training Course**
- 7 – 11 Jun 2021 **Nonlinear problems in Mechanical and Physical Systems**  
Indian Institute of Technology Hyderabad, India
- 08 – 12 Oct 2020 **Advanced Machine Learning for Biosignal Data**  
National Institute of Technology Raipur, India
- 26 Aug 2018 **Practice School for Young Professionals – Noise Control Case Studies**  
International Institute of Noise Control Engineering (I-INCE), Chicago, USA
- 27 Aug 2018 **Young Professional Workshop**  
International Institute of Noise Control Engineering (I-INCE), Chicago, USA
- 23 May 2016 – 3 Jun 2016 **Computational Acoustics for Emerging Needs**  
Indian Institute of Technology Bhubaneswar, India
- 1 – 5 Sep 2014 **One-week Acoustics course: Comprehensive Theory, Applications and Simulations**  
Free Field Technologies, Chennai, India
- 7 – 11 July 2014 **One-week training program: Noise and Vibration Control**  
Indian Institute of Science, Bengaluru, India

## PUBLICATIONS

### Journals:

1. **D. Veerababu**, R. Ashwin and Prasanta K. Ghosh, "Improving neural network training using loss-based dynamic learning rate schedule for PINNs and image classification", *Machine Learning with Applications*, 21, 100697, (2025).  
<https://doi.org/10.1016/j.mlwa.2025.100697> (Q1, Impact factor: 4.9)
2. **D. Veerababu** and Prasanta K. Ghosh, "Prediction of acoustic field in 1-D uniform duct with varying mean flow and temperature using neural networks", *Journal of Theoretical and Computational Acoustics*, 33(2), 2440003, (2025).  
<https://doi.org/10.1142/S2591728524400036> (Q2, Impact factor: 1.1)
3. **D. Veerababu** and Prasanta K. Ghosh, "Solving 2-D Helmholtz equation in the rectangular, circular, and elliptical domains using neural networks", *Journal of Sound and Vibration*, 607, 119022, (2025).  
<https://doi.org/10.1016/j.jsv.2025.119022> (Q1, Impact factor: 4.9)
4. **D. Veerababu** and Prasanta K. Ghosh, "Neural network based approach for solving problems in plane wave duct acoustics", *Journal of Sound and Vibration*, 585, 118476, (2024). <https://doi.org/10.1016/j.jsv.2024.118476> (Q1, Impact factor: 4.9)

5. **D. Veerababu**, Namra Quasim, and Prasanta K. Ghosh, "Estimation of Acoustic Field in a Uniform Duct with Mean Flow using Neural Networks", *International Journal of Acoustics and Vibration*, 29(4), 391-399, (2024).  
<https://doi.org/10.20855/ijav.2024.29.42062> (Q3, Impact factor: 0.8)
6. **D. Veerababu**, C. Sachin, P. V. S. Subhashini, and B. Venkatesham, "Acoustic modelling and analysis of automotive air-filters", *International Journal of Acoustics and Vibration*, 28(4), 353 – 361, (2023).  
<https://doi.org/10.20855/ijav.2023.28.41959> (Q3, Impact factor: 0.8)
7. **D. Veerababu** and B. Venkatesham, "Transmission loss of lined Helmholtz resonator with annular air-gap: A Green's function based approach", *Noise Control Engineering Journal*, 69(2), 112-121, (2021).  
<https://doi.org/10.3397/1/376912> (Q3, Impact factor: 0.5)
8. **D. Veerababu** and B. Venkatesham, "A Green's function solution for acoustic attenuation by a cylindrical chamber with concentric perforated liners" *ASME Journal of Vibration and Acoustics*, 143(2), 021004, (2021).  
<https://doi.org/10.1115/1.4048172> (Q1, Impact factor: 1.9)
9. **D. Veerababu** and B. Venkatesham, "Green's function approach for the transmission loss of concentrically multi-layered circular dissipative chamber", *Journal of the Acoustical Society of America*, 147(2), 867 – 876, (2020).  
<https://doi.org/10.1121/10.0000675> (Q1, Impact factor: 2.3)

#### International Conferences:

1. Akanksha Singh, **D. Veerababu**, Prasanta K. Ghosh, "Physics-informed neural networks for predicting acoustic pressure inside ducts", *ICASSP 2025*, Hyderabad, India, 6 – 11 Apr, (2025).
2. **D. Veerababu**, Prasant K. Ghosh, "Prediction of one-dimensional acoustic field with axial temperature gradient using neural networks", *Inter-Noise 2024*, Nantes, France, 25 – 29 Aug, (2024). [https://doi.org/10.3397/IN\\_2024\\_3663](https://doi.org/10.3397/IN_2024_3663)
3. **D. Veerababu**, J. Pavan Kumar, Prasant K. Ghosh, "Loss-based optimizer switching to solve 1-D Helmholtz equation using neural networks", *Acoustics 2023 Sydney*, Australia, 4 – 8 Dec, (2023). <https://doi.org/10.1121/10.0022918>
4. **D. Veerababu**, R. Ashwin, Prasant K. Ghosh, "Achieving stable convergence of neural networks for estimating acoustic field in uniform ducts", *Acoustics 2023 Sydney*, Australia, 4 – 8 Dec, (2023).  
<https://doi.org/10.1121/10.0022917>
5. **D. Veerababu** and Prasanta K. Ghosh, "Solution of 1-D Helmholtz equation using artificial neural networks", *Proceedings of the 29<sup>th</sup> International Congress on Sound and Vibration*, ICSV29, Prague, 9 -13 July, (2023).
6. **D. Veerababu** and B. Venkatesham, "Evaluation of acoustic performance of multi-perforate lined chamber by means of Green's function", *Proceedings of the 27<sup>th</sup> International Congress on Sound and Vibration*, ICSV27, 11 – 16 July, (2021).
7. **D. Veerababu** and B. Venkatesham, "Effect of shell compliance on the axial transmission loss of concentric tube resonator", *Proceedings of 13<sup>th</sup> Western Pacific Acoustics Conference*, WESPAC2018, New Delhi, India, 11 – 15 Nov, (2018).
8. **D. Veerababu** and B. Venkatesham, "Acoustic analysis of extended inlet/extended outlet concentric tube resonator using Green's function", *INTER-NOISE & NOISE-CON Congress and Conference Proceedings*, Inter-Noise 18, 2170 – 2178, Chicago, USA, 26 – 29 Aug, (2018).
9. **D. Veerababu** and B. Venkatesham, "Three-dimensional acoustic analysis of concentric tube resonator using Green's function", *Proceedings of the 24<sup>th</sup> International Congress on Sound and Vibration*, ICSV24, 4, 2305 – 2312, London, UK, 23 – 27 Jul, (2017).
10. G. Pradeep, T. T. Raja, **D. Veerababu**, B. Venkatesham and S. Ganesan, "Numerical prediction of perforated tube acoustic impedance", *Proceedings of the 24<sup>th</sup> International Congress on Sound and Vibration*, ICSV24, 4, 2361 – 2368 London, UK, 23 – 27 Jul, (2017).

#### National Conferences:

11. **D. Veerababu**, B. Shivateja, B. Venkatesham, B. Nikhil, NDevara NSR Prasad, G. Anvesh kumar, Scaling Laws for acoustic duct performance measurement, *50<sup>th</sup> National Symposium on Acoustics*, NSA – 2023, Odisha, India, 24 – 26 Feb, (2023).
12. **D. Veerababu** and M. L. Munjal, 3-D FEM as well as 1-D Analysis of a Three-Pass Double-Reversal Muffler, *Acoustics 2014*, Mysore, India, 12 – 14 Nov, (2014).
13. **D. Veerababu** and M. L. Munjal, 1-D Flow-Acoustic Analysis of Hybrid Three-Pass Double-Reversal Mufflers, *Acoustics 2013 (An Indo-French Conference on Acoustics)*, New Delhi, India, 10 – 15 Nov, (2013).

## REFEREES

---

- Dr. Prasanta K. Ghosh** Associate Professor, Department of Electrical Engineering, Indian Institute of Science, CV Raman Road, Bengaluru, India – 560012  
[prasantg@iisc.ac.in](mailto:prasantg@iisc.ac.in)
- Prof. B. Venkatesham** Professor, Department of Mechanical and Aerospace Engineering, Indian Institute of Technology Hyderabad, Kandi, Sangareddy District, Telangana, India – 502285  
[venkatesham@mae.iith.ac.in](mailto:venkatesham@mae.iith.ac.in)
- Prof. M. L. Munjal** Professor Emeritus, Department of Mechanical Engineering, Indian Institute of Science, CV Raman Road, Bengaluru, India – 560012  
[munjal@iisc.ac.in](mailto:munjal@iisc.ac.in)
- Prof. Saravanan Balusamy** Professor, Department of Mechanical and Aerospace Engineering, Indian Institute of Technology Hyderabad, Kandi, Sangareddy District, Telangana, India – 502285  
[saravananb@mae.iith.ac.in](mailto:saravananb@mae.iith.ac.in)