Dr. Madhavi S. Pednekar

Profile Summary:

Teaching is my passion, and I bring with me over 23 years of dedicated experience in the field of education, all of which I have proudly served at **Don Bosco Institute of Technology (DBIT), Mumbai**. Currently, I hold the position of **Head of the Department** of **Electronics & Telecommunication Engineering** at DBIT. I am serving as the **NSS Lady Program Officer** representing DBIT under the **University of Mumbai**, actively promoting community service and social responsibility among students.

I also take up the challenge of teaching in the **Mechanical** and **Information Technology** departments whenever required, contributing to interdisciplinary learning across the institute.

Beyond academics, I am an **active member of the Women Development Cell** and the **Internal Complaint Committee** at DBIT, contributing to a safe and inclusive campus environment. Over the years, I have also played significant roles as **Project Coordinator**, **IEEE-DBIT Students' Branch Counselor**, **Technical Committee Member**, and **Sports In-charge**, supporting students' academic, technical, and extracurricular development.

In addition to my academic responsibilities, I have been serving as the **Alumni Convener** at DBIT since 2021. I have been actively involved with the **DBIT Alumni Cell** for over a decade, playing a key role in organizing alumni meets, interactive sessions, and various collaborative initiatives to strengthen the bond between the institute and its alumni network.

I hold a Doctorate in the field of **Automatic Identification of Malvani Dialects from Indian Marathi Language** from **Assam Don Bosco University, Guwahati, India**. My research lies at the intersection of linguistics and machine learning, focusing on dialect recognition within the Marathi language spectrum. Prior to this, I earned both my **Bachelor's and Master's degrees in Electronics and Telecommunication Engineering**, graduating with distinction from two of Mumbai's prestigious institutions—**VJTI (Veermata Jijabai Technological Institute)** and **Vivekanand Education Society's Institute of Technology**.

I am also actively associated with the **University of Mumbai** and various **Autonomous Institutions** as a convener and member for syllabus design, paper setting, and academic evaluations.

Designation: Assistant Professor and Head of Department

IDs

- Google Scholar Link: https://scholar.google.com/citations?user=CI5pl7YAAAAJ&hl=en
- LinkedIn URL: www.linkedin.com/in/madhavi-pednekar-7b564a125
- VIDWAN ID: 457521

- Orcid ID: https://orcid.org/0009-0001-1787-712X

Educational Details:

Sr. No.	Degree	Board / Institution / University	Year
1	Ph.D (EXTC)	Assam Don Bosco University, Guwahati	April 2025
2	M.E. (EXTC)	Vivekanand Institute of Technology, Mumbai University	June 2010
3	B.E. (ETRX)	SES College of Engineering, Kopargaon, Pune University	July 2001

Date of Joining DBIT: 02 July 2002

Area of Specialization:
- Speech Recognition
- Signal Processing (Language/Dialect Identification)
- Embedded Systems and Automation
- Database Management Systems (DBMS)
- Electronic System Design
- Sensor Technology

Teaching Experience in DBIT:

Sr. No.	Position Held	Dates (From-To)
1	Assistant Professor	01 January 2011 till date
2	Senior Lecturer	01 April 2008 to 31 December 2010
3	Lecturer	02 July 2002 to 31 March 2008

Total Teaching Experience:

Sr. No.	Institution	Dates (From-To)	Designation
1	DBIT, Mumbai	01 January 2011 till date	Assistant Professor
2	DBIT, Mumbai	01 April 2008 to 31 December 2010	Senior Lecturer
3	DBIT, Mumbai	02 July 2002 to 31 March 2008	Lecturer
4	V.J.T.I. Mumbai	01 October 2001 to 30 June 2002	Lecturer

Peer Reviewed Journal Papers:

- Madhavi S. Pednekar, Kaustubh Bhattacharyya, B.K. Lande, "Automatic Identification of Malvani Dialects from Audio Signal Based on Hybrid FFO-TSO with Deep Neural Network", An International Journal of Multimedia Tools and Applications, 2024 Springer, https://doi.org/10.1007/s11042-024-19490-4.

- Madhavi S. Pednekar, Neel Pujari, Prathamesh Kurdekar, Kaustubh Bhattacharyya, B. K. Lande, "An Automatic Speech Recognition and Language Identification: A Comprehensive Review," Journal of Technology, Volume 12, Issue 12, December 2024, P.No.913-922, ISSN:1012-3407, Scopus Publisher: National Taiwan University of Science and Technology, DOI:18.15001/JOT.2024/V12I12.24.1138.
- Madhavi S. Pednekar, Kaustubh Bhattacharyya, B.K. Lande, "Stacking based Ensemble Learning with Deer Hunting Optimization for automatic Identification of Malvani Dialects" International Journal of Image, Graphics and Signal Processing" 2024. (Accepted).
- Stephen D'Cunha, Jovin Miranda, Snadden Braganza,Madhavi S. Pednekar, "Wireless Supervisory Control and Data Acquisition Systems" DBIT TECHjournal, Vol.3, March 30, 2013 ISBN: 978-81-87060-48-2.
- Furkan Karbelkar, Yash Chitre, Jeril Poulose, Kiran Pius, Madhavi Pednekar, "Industrial Surveillance and Monitoring System using ZIGBE", DBIT Tech. Journal, vol. 2, May 01, 2011.

Peer Reviewed Conference Papers:

- Madhavi S. Pednekar, Prathmesh Kurdekar, Neel Pujari, Kaustubh Bhattacharyya, B. K. Lande, "Analysis and Comparison of Methods of Speech Recognition Using Neural Network," 3rd Edition of The International Conference on Science Technology Engineering & Mathematics for Sustainable Development (ICSTEMSD 2025), with the theme "Smart Mobility, Technology and Sustainability'', Atharva College of Engineering, Mumbai, India.
- Poonam Chakraborty, Namita Agrawal, Madhavi Pednekar presented a paper titled "Breaking the Glass Ceiling - A New Way" in National Conference on 'Gender Bias in Technology', Auro University, Surat, March 8-9, 2021.
- Madhavi S. Pednekar, Umesh. Pendurkar, Aishwarya Kotian, Rutuja Shelar, presented a paper on "Efficient & Cost Effective Water Quality Testing System" at the 4th International Conference on "Computing in Engineering and Technology - ICCET-2019" organised by Dr. Babasaheb Ambedkar Technological University (BATU) University at Aurangabad, Maharashtra, India, published in Springer "Advances in Intelligent Systems and Computing (AISC)", 9-11 January, 2019.
- Madhavi S. Pednekar, Justine Ayroor, Valency Colaco, "Design and Implementation of a Solar Dryer for Food Industries" International Conference on "Recent Trends in Sustainable Technologies", ICRTST-2018, Mumbai, July 21-22, 2018, published in the Journal of applied Science and Computations - JASC
- Madhavi S. Pednekar, Justine Ayroor, Suman Deb, "Design and Development of Underwater Vehicle" International Conference on "Advances in Science and Technology, ICAST-2018, Mumbai, April 6-7, 2018, ISSN 0973-6972.
- Madhavi S. Pednekar, Joel Amanna, Jino John, Abhishesh Singh, Suresh Prajapati, "Voice Operated Intelligent Fire Extinguishing Vehicle" International Conference on Technologies for Sustainable Development, ICTSD 2015, Mumbai, February 4-6, 2015, ISBN: 978-1-4799-8187-8
- Chetna Singh, Disha Shetty, Saurabh Sharma,Shrawan Jawandhia, Madhavi S. Pednekar "Implementation of Smart Controls to make educational classrooms Energy Efficient", International Technological Conference (I-TechCON 2014) January 3-4, 2014, V.E.S. Institute of Technology, Mumbai, (IJAIEM, ISSN 2319-4847).
- Mandar Gilke, Pramod Kachare, Rohit Kothalikar, Varun Pius Rodrigues, Madhavi S. Pednekar, "MFCC-based Vocal Emotion Recognition using ANN", 2012 International Conference on Electronics Engineering and Informatics (ICEEI 2012)

Singapore Institute of Electronics (SIE), Phuket Island, Thailand, September 1-2, 2012, International Proceedings of Computer Science and Information Technology, ISSN 2010-460X2012, (Vol.49, P.150-154)
- Madhavi S. Pednekar, Kavita Tiware, Sachin Bhagwat "Continuous Speech Recognition for Marathi language using Statistical Method," IEEE International Conference, ACVIT 2009, December 17-19, 2009, Aurangabad, Maharashtra, India.

STTPs/FDPs/Workshops Organized:

- Convener of the organizing committee for the Faculty Orientation Program on behalf of University of Mumbai University of Mumbai Syllabus Drafting Committee (R-2019, C-Scheme) for the course "Data Compression and Encryption" (Sem-V) on 11 July, 2021.
- Ms. Madhavi S. Pednekar successfully completed AICTE sponsored One Week Short Term Training Program on "Nanotechnology Amazing NANO 2021" organized by Department of Electronics and Communication Engineering, by Don Bosco College of Engineering and Technology, School of Technology, Assam Don Bosco University in collaboration with Institute of Advance Study in Science and Technology, Guwahati from 19th to 24th April, 2021.
- Member of the organizing team for the Faculty Orientation Program on behalf of University of Mumbai University of Mumbai Syllabus Drafting Committee (R-2019, C-Scheme) for the course "Digital System Design" (Sem-III) on July 17,2020.
- Member of organizing team in IEEE and IETE approved STTP on "Open-Source Technologies for Communication Engineering" conducted by EXTC Department, Don Bosco Institute of Technology, Mumbai from 1 to 7 July 2018.
- Member of organizing team at the "International Conference on Technologies for Sustainable Development" , ICTSD 2015 held at Don Bosco Institute of Technology, Mumbai from 5 to 6 February 2015.
- As a Branch counsellor, IEEE-DBIT student's chapter organized a 02-Days Training Program on "Antenna Design: Antenna: Concepts, Designing and its Measurements "for the students of TE-EXTC, DBIT on 6-7 September, 2013.
- As a Branch counsellor, IEEE-DBIT student's chapter organized a technical workshop on "Circuit Simulation Using MULTISIM And SPICE" for the students of SE-EXTC on September 13-14, 2012.
- A two-day Workshop on "iTOUCH ROBOTIC ARM" was organized in association with Technophlia Systems and Robotics and Computer Applications Institute of USA on September 30, 2012 and October 2, 2012 for the students of EXTC and Mechanical engineering.

STTPs/FDPs/Workshops Attended:

- One-week online AICTE Training and Learning (ATAL) Academy Faculty Development Program on "Cross Roads of AI and Signal Processing" at Shri Vile Parle Kelvani Mandal's Dwarkadas J. Sanghavi College of Engineering, Mumbai from 27/01/2025 to 01/02/2025.
- National Conference on "Gender Bias in Technology" organized by Women Development Cell, AURO University, Surat in collaboration with Don Bosco Institute of Technology, Mumbai and Institute of Electricals and Electronics Engineers Bombay Section Women in Engineering on 8-9 March, 2021.

- Summer Faculty Research Fellow Programme at Indian Institute of Technology, Delhi in the Industrial Automation from May 15 to July 16, 2015.
- One week sponsored Short Term Course on "Integrated Automation Technologies" conducted by Mechanical department, Indian Institute of Technology, Delhi from 1 - 6 June 2015.

STTPs/FDPs/Webinar Attended: (Online Mode)

- Panel Discussion on "Worklife Balance for Women Post Covid-19" organised by Ishrae –Thane Chapter on April 25,2020.
- 04-days online Faculty Development Program on "Research, Funding Projects & IPR " jointly organized by IQAC, R & D Cell & Dept. of Electronics & Telecommunication under the banner of IETE and Institution's Innovation Council (IIC) of K. C. College of Engineering and Management Studies and Research, Thane (E) from May 7-10, 2020.
- Webinar on "UG Project Management (A PBL Approach)" organized by JSPM's RSCOE Information Technology Department in association with CMI, Albor University, Copenhagen, Denmark on May 11, 2020.
- Webinar on the "5G-Communication of Next Generation" organized by ISTE VIT Student Chapter in association with Electronics and Telecommunication of Vidyalankar Institute of Technology on May 14, 2020.
- Webinar on "Emerging Trends Post COVID-19" on May 16, 2020 organized by IEEE-DBIT and IETE-DBIT, Mumbai.
- 05-days Online Short-Term Training Program, STTP on "MATLAB based Teaching-Learning in Mathematics, Science & Engineering" during May 18-22, 2020 organized by the Department of Electronics Engineering, Ramrao Adik Institute of Technology, Nerul, Navi Mumbai in collaboration with DesignTech Systems Pvt. Ltd., Mumbai.
- Webinar on "Physics and Engineering" on May 21, 2020 organized by IEEE-DBIT and IETE-DBIT, Mumbai.
- Webinar on "Challenges & Opportunities for Developing Mindset and Skills Required Post COVID Era" on May 22, 2020 organised by MIT Art, Design and Technology University, Pune.
- Webinar on "Research Paper Preparation and Publication" on May 24, 2020, organised by ASCEE Committee, Department of Computer Engineering, Gharda Institute of Technology, At. Po. Lavel, Ratnagiri, Maharashtra 415 708.
- Webinar on "Critical Media Literacy" on May 27, 2020 organised by IEEE-DBIT and IETE-DBIT, Mumbai.
- 05-days Online Short-Term Training Program, STTP on "Sensor, IoT and Machine Learning organised by Department of Electronics Engineering, K.J. Somaiya College of Engineering, Vidyavihar, Mumbai during June 1-5, 2020.
- 'National Webinar on Creating a Green Campus' organized by IQAC, Bharat College of Arts & Commerce and Roshni Udyavar & Associates (RU&A), June 5, 2020.
- Webinar on "Open-Source Technology-A Step Towards Collaborative Learning" on June 05, 2020 organised by IEEE-DBIT and IETE-DBIT, Mumbai.
- Webinar on "Math and Neural Networks (Techniques & Technologies)"on June 06, 2020 organized by Domain-MATH Club & Department of BSH, Don Bosco Institute of Technology, Mumbai.
- Faculty Development Programme On "New Age Learning: How To Conduct Sessions Online" on June 14, 2020 organised by Don Bosco Institute of Technology, Mumbai.

- Webinar on "Mathematics for Artificial Intelligence" on June 25, 2020 organized by CSI-DBIT & Department of IT Engineering, Don Bosco Institute of Technology, Mumbai.
- Webinar on "Harnessing The Power of Body Language" on July 01, 2020 organised by the Department of Mechanical Engineering, Don Bosco Institute of Technology, Mumbai.
- Webinar on "IPR AND INNOVATION" on July 02, 2020 organised by the Department of Mechanical Engineering, Don Bosco Institute of Technology, Mumbai.
- Webinar on "Research Methodology" organised by Loyola College, Chennai on July 17, 2020.
- Webinar on "Women In Engineering" organised by IETE-ISF-DBIT in association with IETE-M center on September 5, 2020.
- Webinar on "Future Engineering with Data Science" on November 10, 2020 organised by School of Technology, Assam Don Bosco University, Assam, Guwahati-781017.
- Online Orientation Programme for "MEC405:Industrial Electronics (IE) and MEL401: IE Lab, approved by University of Mumbai on March 5, 2021 at Fr. C. Rodrigues Institute of Technology, Vashi, Navi Mumbai.
- Webinar on "Embedded Artificial Intelligence for the IoT" in collaboration with Digitoad Technologies and Cartesiam on March 13, 2021 organised by School of Technology, Assam Don Bosco University, Guwahati.
- 06-days Online Short-Term Training Program, STTP on "Sensor, IoT and Machine Learning organised by Department of Electronics Engineering, K.J. Somaiya College of Engineering, Vidyavihar, Mumbai during June 1-5, 2020.
- AICTE sponsored One Week Short Term Training Program on "Nanotechnology AmazingNANO 2021" organised by Department of Electronics and Communication Engineering, by Don Bosco College of Engineering and Technology, School of Technology, Assam Don Bosco University in collaboration with Institute of Advance Study in Science and Technology, Guwahati from 19th to 24th April, 2021.

Trainings Undergone in Industry/ Joint Research Publications:

- Completed a three-week internship at CommTel Networks Pvt. Ltd., Juinagar, Navi Mumbai on "Smart Grids to 'Smarter' Grids – The Future of Power Systems with Unified Critical Communications" from 30 May to 17 June 2022.
- Completed a three-week internship at *Applied Digital Microsystems* Pvt. Ltd., Mumbai on "Embedded Systems and FPGA Boards" during 02 Dec to 20 Dec 2019.
- on "Smart Grids to 'Smarter' Grids – The Future of Power Systems with Unified Critical Communications" from 30 May to 17 June 2022.
- International Visit to Taiwan during 24 to 27 November 2018. Visited universities like Fu Jen Catholic University, New Taipei City (1929) Lunghwa University of Science and Technology, Yuan Ze University, Taoyuan City (1989) – Big Data Centre, Ming Chi University of Technology, (1963) Taipei and Industry like Solen Electric Company LTD. PAMTEC - Ming Feng Technology Co., LTD., Taiwan Mastermind Intellectual Property office (TMIPO) for Research, Innovation and Collaboration for collaboration for innovation and start-ups with Taiwan Universities/Industries and set up an incubation/innovation cell with DBIT Member.

Professional Body Memberships:

- Life time Member of INDIAN SOCIETY OF TECHNICAL EDUCATION (ISTE)

- Life time Member of Institution of Electronics and Telecommunication Engineering (IETE)

Invited Talks/Resource Person in STTPs / FDPs:

- Resource person for a session on "Project Based Learning: Analog and Digital devices and Sensors" for second year students of Mechanical Engineering at Don Bosco Institute of Technology, Mumbai on 3rd December 2021.
- Resource person for a session on "Project Based Learning: Digital IC Components and Circuit Design Based Projects" for the students of second year EXTC, DBIT on 18 August 2021.
- Resource person for a Value-Added Course on "Research and Review: Reading and Searching Research and Scientific Articles, Literature Review Summary", for the students of third year EXTC and MECH students in July-October 2021.
- Conducted series of lectures titled as "Searching and Reading the Literature for Scientific Articles, Literature Review Summary: How to use Self-Assessment Tool and Electronic Search: Open Access Scientific Articles with online demonstrations" as a part of Online Moodle Course on "Research and Review- Entering Research" for faculties and third year students of EXTC department at Don Bosco Institute of Technology, Mumbai on April 27-29 and May 03, 2019.
- Resource person for a 02 days' workshop and design contest "CIRCUITRIX ": Designing, Soldering, Testing and Troubleshooting of Analog Circuit for the students of second year, EXTC and MECH department at DBIT on 15 and 22 February, 2013.

Interactions with Professional Institutions:

- An Industrial Visit to "CENTRE FOR DEVELOPMENT OF ADVANCED COMPUTING", CDAC: Pune was organized for the students of BE-EXTC on September 19, 2012.
- Training Program on "C, C++ & JAVA" 9th ,10th ,16th & 19th February 2013 Wegilant Net Solutions.
- Ms. Madhavi S. Pednekar was appointed as a Member of the Syllabus Drafting Committee for "Data Compression and Cryptography", R-2019 Scheme of Third Year Semester - V, Electronics and Telecommunication Programme under University of Mumbai in April 2021.
- Ms. Madhavi S. Pednekar was appointed as a Member of the Syllabus Drafting Committee for "Digital System Design", R-2019 Scheme of Second Year Semester - III, Electronics and Telecommunication Programme under University of Mumbai in July 2020.

Achievements/Awards/Recognitions:

- Ms. Madhavi S. Pednekar is selected as a member of "First Draught Discussion Forum of MLC" on April, 26, 2021 and offered a free annual membership'2021 under Mumbai Linguistic Circle, Department of Linguistic, University of Mumbai, Vidyanagari, Kalina, Santacruz (East) Mumbai-400098.

Other Achievements & Responsibilities:

- A resource faculty for one semester TE Honors Degree/Minor Program for students of third year Mechanical Engineering branch titled as "Electrical Vehicle and IoT" in AY 2023-24.
- As Alumni Convener successfully organized an institute level Synchrony Meet 2024 on 24

April 2024 for all the alumni of DBIT.

Funded Research:

- 2018–19 (funds received in 2019–20) Received a research grant of ₹20,000 from the University of Mumbai for the project titled "Design and implementation of Advanced Water Quality Testing System."

- 2015–16 Received a research grant of ₹30,000 from the University of Mumbai for the project titled "Forced/Natural Convection Solar Drier".

External Agencies

- 2018–19 (funds received in 2019–20) Received a research grant of ₹20,000 from the University of Mumbai for the project titled "Design and implementation of Advanced Water Quality Testing System."

- 2015–16 Received a research grant of ₹30,000 from the University of Mumbai for the project titled "Forced/Natural Convection Solar Drier".

Institute Development/Department Responsibilities Handled:

- Head of the Department of Electronics and Telecommunications from January 2025 till date.
- NSS Lady Program Officer, DBIT at University of Mumbai.
- Convener, DBIT Alumni Committee since July 2022 till date.
- Member of WDC and ICC, OBC, Placement Cell at DBIT.
- EXTC Department Day, Synergy Coordinator in 2019.
- Convener, Housekeeping and Maintenance Committee from 2018-2023.
- Research Group Leader for VLSI and Embedded System from July 2016 to May 2022.
- NAAC Criteria 1 Committee Member Jan 2018 till date.
- EXTC Project Coordinator from 2015-2016.
- Branch Counsellor of IEEE –DBIT Student Chapter in 2013-2015.
- Member of Marathi Club from July 2022 till date.
- Laboratory In-charge since 2002 to December 2024.

Contact Details:
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Personal Webpage Link: https://sites.google.com/view/madhavipednekar/home