



## CURRICULUM VITAE

**Dr. MADHUSUDHANA  
REDDY BARUSU**

### Residential Address

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### CAREER SUMMARY:

Seasoned Professor with fifteen years of experience teaching undergraduate courses in Electronics and Communication Engineering. M.Tech (VLSI Design) and Ph.D (Electronics Engineering) holder with a vast experience in the educational sector and sound knowledge of VLSI design, Digital Electronics and Electronic circuits played a pivotal role in the development of the students in the electronics domain. Actively participate in continued learning through conferences and professional research. To the research credentials, have 17 research journals (5-SCI indexed), 17 conference papers and received grants from IEEE to implement a projects. Visited the United Kingdom and Lithuania to present research papers. Believe in students' abilities to learn and inherent thirst for knowledge with the right environment. Actively work to connect students to their material to transform lives.

### ACCOMPLISHMENTS SUMMARY:

- ✓ **NBA** *Achieved NBA accreditation for ECE of RCEW in the year 2021*
- ✓ **NAAC** *Achieved NAAC accreditation with A+ as Coordinator in the year 2022*
- ✓ **National Award** *Received ONE national Awards as Young Researcher Award from InSc*
- ✓ **Research & Development** *Received a grant of 2Lakhs from IEEE Signal Processing Society.*
- ✓ **Journal Publications** *Having TWENTY international & national publications*
- ✓ **Reviewer** *for Journals-IET, IEEE, etc.*
- ✓ **Books published** *Published a book on Electronics Circuits-1*

- ✓ **Book chapters published** Published Three national book chapter
- ✓ **Memberships** SMIEEE, FIETE, LMISTE
- ✓ **Patents** Published four patents
- ✓ **Conferences organized** Co-Convener for the International Conference-ICACDS-2022

## RESEARCH DURING Ph.D.:

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**Ph.D. Thesis Title** **“A novel, non-invasive, high speed and Cost effective SPLL based condition monitoring of 3-phase Squirrel Cage Induction Motor (SCIM) with Ultra-Wide Band (UWB) radar signal analysis”** under the supervision of Dr. D. Meganathan, Associate Professor in the Department of Electronics Engineering, Madras Institute of Technology, Anna University, India.

The major objective of my Ph.D. is to investigate the vibration signal of the motor for condition monitoring. In this aspect, the key objectives of my Ph.D. work are.

- Design and implement a sensor module for vibration signal analysis with different signal processing algorithms such as FFT/STFT/Wavelets.
- Analysis of various electrical and mechanical faults of induction motor
- Implement a cost-effective technique to identify the faults.

## ACADEMIC PROFILE:

### QUALIFICATION: M.Tech (VLSI Design), Ph.D (Electronics Engineering)

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<b>PG Diploma Certification</b>	Jun-2024 – Dec-2024	Diploma Course on <b>Internet of Things (IoT)</b> from <b>Indin Institute of Information Technology-Design and Manufacturing (IIITDMK)</b> -Kurnool, Andhra Pradesh, India sponsored by <b>All India Council for Technical Education(AICTE)</b> , New Delhi.
<b>Engineering (Doctorate)-Ph.D.</b>	Jan-2020 (Awarded)	Completed <b>Ph.D (Electronics Engg)</b> from <b>Anna University, Chennai.</b> , India in <b>Department of Electronics</b> .
<b>Engineering (PG)</b>	2007-2009	<b>M.Tech., VLSI design</b> from <b>Sathyabama University</b> , with First Class (Distinction) – 8.21 CGPA

<b>Engineering (UG)</b>	2003-2007	<b>B.Tech.,</b> (Electrical and Electronics Engineering), Narayana Engineering College, Nellore, <b>JNTU-Hyderabad</b> with First Class (Distinction) -74.34 %
<b>+2</b>	2001-2002	JNVK - Banavasi, <b>CBSE board</b> , New Delhi with First class (Distinction) – 79.8%
<b>10<sup>th</sup></b>	1999-2000	JNVK - Banavasi, <b>CBSE board</b> , New Delhi with First class (Distinction) – 85.2%

## **WORK EXPERIENCE: 15 Years 01 Months Cumulative**

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- **Professor and Dean(IQAC), 27-Jun-2024 (FN) - till date**, Ravindra College of Engineering for Women, Kurnool, Andhra Pradesh
- **Professor and HOD**, Dept of Electronics and Communication Engg **28-Aug-2021 (AN) – 26-Jun-2024**, Ravindra College of Engineering for Women, Kurnool, Andhra Pradesh
- **Professor**, Dept of Electronics and Communication Engg **26-Aug-2020- 28-Aug-2021(FN)**, Ravindra College of Engineering for Women, Kurnool, Andhra Pradesh
- **Asst. Professor**, Dept of Electronics and Communication Engg **11-Apr-2011- 31-Jul-2020** Vel Tech High Tech Dr.Rangarajan Dr.Sakunthala Engineering College, Chennai, Tamil Nadu.
- **Asst. Professor**, Dept of Electronics and Communication Engg **01-Apr 2009 – 07-Apr 2011** Dr. K.V. Subba Reddy College of Engineering for Women, Kurnool, Andhra Pradesh.

## **RESEARCH AND DEVELOPMENT GRANTS RECEIVED:**

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- Received a grant of **\$2313** from **the IEEE SPS & HTB for Signal Processing Technologies for Local Community Challenges-2023**, for project titled **Automatic water distribution for piped and micro irrigation network for optimal water utilization (23-SPSHTB-10)**.
- **Texas Instruments Innovation challenge India design Contest 2015** for project “**MULTI PURPOSE PATIENT MONITORING SYSTEM,**”

- Received a grant of Rupees **14000/-** from **Texas Instruments Innovation challenge India design Contest 2015** for project “MULTI PURPOSE PATIENT MONITORING SYSTEM,”
- Received a grant of Rupees **34500/-** from **Engineer infinite 2014 edition student project contest (Electrama-2014)** for project “CONSERVATION OF ENERGY FROM ELECTROMAGNETIC WAVES” conducted during 8-12, January, 2014 at Bengaluru.

## **RESEARCH AND DEVELOPMENT PROJECTS COMPLETED/ONGOING:**

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### **PROJECT-1:**

<b>Title</b>	<b>Automatic water distribution for piped and micro irrigation network for optimal water utilization (23-SPSHTB-10)</b>
<b>Funding Agency</b>	<b>IEEE SPS &amp; HTB for Signal Processing Technologies for Local Community Challenges-2023</b>
<b>Grant Received</b>	<b>USD 2313\$</b>
<b>Duration</b>	<b>1-Year (26-12-2023 TO 25-12-2024)</b>
<b>Abstract</b>	<p>Agriculture is one of important source of employment of many people of Andhra Pradesh state in India. Many parts of this state have scarcity of water and not sufficient for agriculture needs. So, In modern agricultural practices, efficient water management plays a critical role in achieving optimal crop yields, conserving water resources, and maintaining ecological balance. However, existing irrigation systems often lack the precision required to deliver water to the actual needs of crops, leading to water wastage, sub-optimal plant growth, and environmental degradation. This problem is particularly pronounced in piped and micro irrigation networks, where traditional methods of manual control fail to adapt dynamically to varying soil moisture conditions within the root zone of crops. The core issue lies in the absence of an automated mechanism that can regulate the release of water based on real-time soil moisture availability. The inconsistency in water distribution and the inability to synchronize irrigation with crop water requirements result in detrimental outcomes for both the agricultural yield and water conservation efforts.</p> <p>To address this problem, proposed a method by incorporating AI-powered soil moisture monitoring and decision-making processes, this solution aims to bridge the gap between water supply and crop demand, while also optimizing resource utilization and minimizing environmental impact.</p>

## PUBLICATIONS: (17 Papers)

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1. G. Pandu Ranga Reddy, **B. Madhusudhana Reddy**, Syed Inayatullah, Gaddam Jasuva, M.Arun & Mallela Naveen, International Journal of Innovation in Multidisciplinary Scientific Research (IJIMSR), **Novel UPQC Control Method for DFIG-Based Wind System Under Different Loads**, Volume – 2, Issue – 1, 2024, DOI : <https://doi.org/10.61239/IJIMSR.2024.2111>
2. Nalubolu Geetha Rani, N.Praveen Kumar, **Madhusudhana Reddy Barusu**, D Venkata Srihari Babu, Supraja.V, Journal of Systems Engineering and Electronics, “**GBB technique to enhance performance of near threshold circuits**”, **Volume 34 Issue 5 2024,pp-455-457.**
3. **Madhusudhana Reddy Barusu**, N. Geetha Rani, Y.V. Siva Reddy, G.Pandu Ranga Reddy, **International Journal of Power Electronics and Drive System (IJPEDS)**, “**A non-invasive technique for monitoring Supply voltage variation to Single Phase Induction Motor using Doppler UWB Radar Signal analysis**”, Vol. 15, No. 1, March 2024, pp. 35~44 ISSN: 2088-8694, DOI: 10.11591/ijpeds.v15.i1.pp35-44
4. **Madhusudhana Reddy Barusu**, Meganathan Deivasigamani, **IETE Journal of Research**, “**Diagnosis of Multiple Rotor Bar Faults of Squirrel Cage Induction Motor (SCIM) Using Rational Dilation Wavelet Transforms**”. Vol. 69, no.1, pp. 249-263, **January 2023 (SCI-E Indexed, IF-1.125)** **DOI:10.1080/03772063.2020.1816223**
5. **Madhusudhana Reddy Barusu** , Meganathan Deivasigamani, **IEEE Sensors Journal**, “**Non-invasive Vibration Measurement for Diagnosis of Bearing Faults in 3-Phase Squirrel Cage Induction Motor Using Microwave Sensor**”. vol. 21, no. 2, pp. 1026-1039, 15 Jan, 2021 **(SCI-E Indexed, IF-3.076)** **DOI: 10.1109/JSEN.2020.3004515.**
6. **Madhusudhana Reddy Barusu**, Umamaheswari Sethurajan, Meganathan Deivasigamani, **Elektronika ir Elektrotechnika**, “**Diagnosis of Bearing Outer Race Faults Using a low-cost non-contact method with Advanced Wavelet Transforms**”. Volume 25, Issue 1, February 2019, p.44-53 **(SCI-E Indexed, IF-1.08)** **DOI: 10.5755/j01.eie.25.1.22735**
7. **Madhusudhana Reddy Barusu** , Umamaheswari Sethurajan, Meganathan Deivasigamani, **IET Power Electronics**, “**Low-Cost SPLL Based Electrical Faults Identification for Three-Phase Squirrel Cage Induction Motor Using Handheld Doppler RADAR Signal Analysis**”. Volume 11, Issue 7, June 2018, p. 1205 – 1216 **(SCI-E Indexed, IF- 2.839)** **DOI: 10.1049/iet-pel.2017.0267**
8. **Madhusudhana Reddy Barusu** , Umamaheswari Sethurajan, Meganathan Deivasigamani, **IET -The Journal of Engineering**. “**A non-invasive method for rotor bar fault diagnosis in three-phase squirrel**

cage induction motor with advanced signal processing technique". Vol. 2019 Iss. 17, pp. 4415-4419 – (ESCI-Indexed) DOI: 10.1049/joe.2018.8242

9. **Madhusudhana Reddy Barusu**, Priyadharshini.K , Monika.R., **International Journal of All Research Education and Scientific Methods (IJARESM)**, "Comparative Analysis of Wallace Tree Multiplier With Fast Adders Using Xilinx ISE". ISSN: 2455-6211 Volume 8, Issue 11, pp: 20-27, November-2020, (UGC Indexed-ISSN: 2455-6211)
10. **Madhusudhana Reddy Barusu**, G.V.S. Sri Charan, M. Deekshith, N. Rajesh, **International Journal of All Research Education and Scientific Methods (IJARESM)**, "Realization of Different High-Speed Adders Using Quantum-Dot Cellular Automata (QCA) - A Review". ISSN: 2455-6211 Volume 8, Issue 11, pp: 65-72, November-2020, (UGC Indexed-ISSN: 2455-6211)
11. N.Prabhakaran, **Madhusudhana Reddy Barusu**, S.Krishnakumari, JXAT—"Design of switched capacitor based ring modulator using differential voltage current conveyor and Op-Amp 180-90 nm technology" , Volume XII, Issue IV, April-2020, pp. 3051-3063. (Scopus Indexed) DOI: 10.37896/JXAT12.04/1043
12. **Madhusudhana Reddy Barusu**, Muni Reddy, K.Shanmuga priya & R.Srividhya **International Journal of Mechanical and Production Engineering Research and Development (IJMPERD)**—"Irrigation, fertilizing and weed cutting in the row crops with IOT controlled robot"- ISSN (P): 2249-6890; ISSN (E): 2249-8001, Vol. 8, Special Issue 3, Dec 2018, pp.512-518 (Scopus Indexed)
13. Sivasaravanababu.S, **Madhusudhana Reddy Barusu**, Siva Priya. G.S, Punitha.P, Shanmuga Priya.K, **International Journal of Pure and Applied Mathematics**: "Bronchogenic carcinoma identification with X-ray image using fuzzy C means" - Volume 119 No. 15, Pg.No. 727-730, ISSN: 1314-3395, 2018. (Scopus Indexed)
14. G. Vishnuvardhan Rao, **Madhusudhana Reddy Barusu**, PraveenKumar.E, Sakana.G: **International Journal of Pure and Applied Mathematics** "comparative analysis of eye detection and tracking algorithms for Surveillance" Volume 117 No. 22, Pg.No. 71-75,ISSN: 1314-3395,Dec'2017. (Scopus Indexed)
15. **Madhusudhana Reddy Barusu**, Praveen P Jose, Pasupulati Lokesh Babu, V. Logeshwaran: **International Journal of Applied Engineering Research** "CMOS Based Digital Controlled Oscillators (DCO)–A Review" ISSN 0973-4562 Vol. 10 No.20, 2015, pgno:18726-18730. (Scopus Indexed)
16. R. Mohamed niyas, N. Prabhakaran, N. Sathya, P. Vaishnavi, **B. Madhusudhana reddy: Journal of Theoretical and Applied Information Technology** "Error Compensated Fixed Width Modified Booth

Multiplier for Multimedia Applications" 31st December 2014. Vol.70 No.3, Pg No: 451-458. (**Scopus Indexed**)

17. **B.Madhusudhana Reddy**, R.Nisha, P.JeenathNabela, M.Sudheekshitha: **IOSR Journal of Electronics and Communication Engineering** "Restoration of Images Corrupted by High Density Salt & Pepper Noise through Adaptive Median Based Modified Mean Filter" e-ISSN: 2278-2834,p-ISSN: 2278-8735. Volume 5, Issue 5 (Mar. - Apr. 2013), PP 11-15

#### **MANUSCRIPTS UNDER REVIEW:**

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1. Nalubolu Geetha Rani, N.Praveen Kumar, Madhusudhana Reddy Barusu, D Venkata Srihari Babu, Supraja.V, "**GDI based Full Adder Design using FINFETs for Low Power Applications**"
2. **Madhusudhana Reddy Barusu**, Umamaheswari Sethurajan, Meganathan Deivasigamani, **Electrical Engineering-Springer series**: "Microwave Signal Analysis Using Constant-Q Wavelet Transforms for Diagnosis of Induction Motor Faults."

#### **PAPERS PRESENTED IN CONFERENCE: (17 Papers)**

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1. **Madhusudhana Reddy Barusu**, -IEEE 2024 2nd International Conference on Recent Trends in Microelectronics, Automation, Computing and Communications Systems (ICMACC-24), organized by VNR Vignana Jyothi Institute of Engineering and Technology, Hyderabad during 19-21,Dec-2024 "**Pollutants and Heavy Metal Detection in Water Samples Employing Artificial Intelligence**" (Accepted)
2. **Madhusudhana Reddy Barusu**, - 9<sup>th</sup> International Conference on Nanoelectronics, Computational Intelligence & Communication Systems (NCCS-2023) organized by ISVE Ranchi at **Advanced Regional Telecom Training Centre, BSNL**, Hazaribag Road, Ranchi-835217, Jharkhand, India during April 13 -14th , 2024 in **Virtual Mode – Battery Chargers for Electrical Vehicles- A review**
3. **Madhusudhana Reddy Barusu** , 5th International Conference on Energy, Control, Computing and Electronics Systems (ICECCES 2024), 22nd to 24th March 2024, Mohan Babu University, Tirupati- **Artificial Intelligence for Optimal Usage of Water in agriculture - A review**.
4. **Madhusudhana Reddy Barusu** , 5th International Conference on Energy, Control, Computing and Electronics Systems (ICECCES 2024), 22nd to 24th March 2024, Mohan Babu University, Tirupati- **Interconnection of Vehicles Using LIFI Technology**.

5. Madhusudhana Reddy Barusu , 5th International Conference on Energy, Control, Computing and Electronics Systems (ICECCES 2024), 22nd to 24th March 2024, Mohan Babu University, Tirupati-**Machine Learning Applications in Signal Processing.**
6. Akshay K P, Jagadeeshkumar N, **Madhusudhana Reddy Barusu**, Meganathan D - IEEE International Conference on Next Generation Electronics (NEleX 2023), 14-16-Dec-2023, VIT, Chennai, India -**Approximate Compressor for Efficient Multiplication in Image Processing Applications .**
7. **Madhusudhana Reddy Barusu**, Levaku Venkata Naga Jyothirmai, Kopparthi Lakshmi Prathyusha, Vellampalle Pravallika, Peta Soumya, International Conference on Emerging Trends In Electronics & Communication Engineering (ICETECE)- 2023 , **Nandyal, India**, 2023, 15-17 Apr 2023, " **Automatic Speed Control of Vehicles in the Restricted Area Using Internet of Things (IoT),**" 2023.
8. **Madhusudhana Reddy Barusu**, P. N. Pavithra and P. S. R. Chandrika, **2nd IEEE International Conference for Innovation in Technology (INOCON), Bangalore, India**, 2023, 03-05 March 2023, "Optimal Utilization of Water for Smart Farming Using Internet of Things (IoT)," 2023 pp. 1-5, doi: 10.1109/INOCON57975.2023.10101227.
9. Aravind Madhav Uppara, **Madhusudhana Reddy Barusu**, **1<sup>st</sup> AICTE – International Conference-Advances in Mechanical Engineering ICAME'21**, Chennai, India, 27-01-2021 to 28-01-2021, “A survey on advantages and disadvantages, applications of electromagnetic damping”.
10. **Madhusudhana Reddy Barusu**, Meganathan Deivasigamani, **1<sup>st</sup> IETE - International Conference-ICRTST-2020**, Mysuru, India, 17-Jun-2020 to 18-Jun-2020, “Simultaneous Diagnose of Bearing and Rotor Bar Faults of Induction Motor Using Doppler UWB RADAR Signal Analysis”.
11. **Madhusudhana Reddy Barusu** , Umamaheswari Sethurajan, Meganathan Deivasigamani, **22<sup>nd</sup> IEEE International Conference ELECTRONICS-2018, Palanga, Lithuania**,18-Jun-2018 to 20-Jun-2018, “Diagnosis of Bearing Outer Race Faults Using a low-cost non-contact method with Advanced Wavelet Transforms”.
12. **Madhusudhana Reddy Barusu** , Umamaheswari Sethurajan, Meganathan Deivasigamani, **9<sup>th</sup> IET International Conference on Power Electronics, Machines and Drives (PEMD-2018), Liverpool, United Kingdom**, 17-Apr-2018 to 19-Apr-2018, "A non-invasive method for rotor bar fault diagnosis in three-phase squirrel cage induction motor with advanced signal processing technique".
13. **Vishnuvardhan Rao. G, Madhusudhana Reddy Barusu** International Conference on **Intelligent Systems & Control – ISCO 2013** at Karpagam College of Engineering, “Clock Distribution Methods on Large Scale SOCs”.

14. **Madhusudhana Reddy Barusu**, Shivasubramanian. R, Vigneshwaran. V, **AICTE** - National Conference on Technology for Impactful and Sustainable Development of the Society (TISDS-2020), Kurnool, India – 15-Dec-20 &16-Dec-20 “ **Improved Wireless EEG Based Emergency Braking System**”
15. National level Technical conference CARCN-2010 at Sathyabama University, Chennai, “**Active Inductor based CMOS UWB LNA Design.**”
16. National Level Paper Presentation Contest Conducted by **NIT-CALICUT-2009**, “**Applications of Operational Transconductance Amplifier (OTA).**”
17. The National Level Paper Presentation Contest Conducted by **Sree Venkateshwara University, 2007**, “**Neural network controller for UPS inverter applications.**”

## **PATENTS**

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1. **Madhusudhana Reddy Barusu**, Meganathan Deivasigamani, Praveen Kumar, “A system and method for early faults detection in BLDC motors using Rational Dilational Wavelet Transforms(RDWT)” – Published on 01/09/2023
2. Dr. K E Sreenivasa Murthy, **Dr. Madhusudhana Reddy Barusu**, Ms. M Jayalakshmi , Dr. N.Geetha Rani, Mr. Y. Sreenivasula Goud Indian Patent- Application Number- 202241071383, “A NOVEL STRUCTURE FOR CONTROLLING DEGRADATION OF TRANSIENT ELECTRONICS” –applied on 07-Mar-2022 – **PUBLISHED on 6th day of December 2022.**
3. **Dr. S.V. Subburaj, Dr.R.Surendiran , Dr. Madhusudhanan , Nazeer Shaik , Madhusudhana Reddy Barusu, S.Swaminathan**, Indian Patent- Application Number- 202241034402, “**Smart Retrieval Of Medical History Of A Person** ” –Applied On 07-Mar-2022 – **Published On 24-06-2022.**
4. Y.Sreenivasula Goud, Dr. N Geetha Rani, **Dr. Madhusudhana Reddy Barusu**, Ms. C. Ahalya, Ms. M. Jyothirmai, Indian Patent- Application Number- 202241034402, “Bike Helmet Crash Sensors using IOT” –applied on 07-Mar-2022 – **PUBLISHED on 24-06-2022.**
5. Dr. K E Sreenivasa Murthy, Mr. K Venkata Siva Reddy , **Dr. Madhusudhana Reddy Barusu**, Ms. M Jayalakshmi , Mr. P Kishor Kumar , Indian Patent- Application Number- 202241012281, “Autonomous medicine supply robot for hospitals based on wireless beacon network and 5g network” –applied on 07-Mar-2022 – **PUBLISHED on 25-03-2022.**

## BOOKS/BOOK CHAPTERS PUBLISHED/EDITED:

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1. Book Chapter titled “A Study On Taxonomy, Elements And Types Of Design”, **Madhusudhana Reddy Barusu, M. Sailaja, R. Deepthi Crestose Rebekah, N. Manjula, V. Prema Manvi** in book “Futuristic Trends in Computing Technologies and Data Sciences”, ISBN: 978-81-959356-3-5, 1. IIP Proceedings, Volume 2, Book 18, Part 4, Chapter 4
2. **MACHINE LEARNING ALGORITHMS**, **Rajani Rajalingam, Madhusudhana Reddy Barusu, G. Prathibha Priyadarshini, Pulagouni Priyanka**, in book “Futuristic Trends in Computing Technologies and Data Sciences”, ISBN: 978-81-959356-3-5, 1. IIP Proceedings, Volume 2, Book 18, Part 4, Chapter 4.
3. **Madhusudhana Reddy Barusu**, Co-authored a book on “ **Electronic Circuits-1**”.
4. **Madhusudhana Reddy Barusu**, acted as an editor for the book series titled “**Futuristic Trends in Computing Technologies and Data Sciences**” IIP publisher with Series Code **IIP\_V2\_2022\_BS\_11\_05, June-2022**.
5. **Madhusudhana Reddy Barusu**, “ **Green Audit for Sustainable Development of Educational Institutions in India**” Energy and Environment Management Audits, AkiNik Publications, New Delhi, 1<sup>st</sup> Edition, ISBN: 978-93-91538-26-2, pg.no. 269-279, <https://doi.org/10.22271/ed.book.1370>, Nov-2021.

## Conferences/Workshop/FDP/STTP/Webinars/Online Quiz Organized

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1. Successfully organized 6<sup>th</sup> International Conference on Advances in Computing and Data Sciences (ICACDS – 2022) April 22-23, 2022 – **as a Co-Conveners**.

## WORKSHOP/FDP/STTP/Webinars/Online Quiz ATTENDED:

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1. Completed One-week **Online Elementary** FDP on "Data Science" from 21-02-2022 to 25-02-2022 at **J C Bose University of Science & Technology, YMCA, Faridabad**. and **AICTE Training and Learning (ATAL) Academy**
2. **One-week** Online Training Programme on "**Circuit Simulation and PCB Design using Multisim**" from 26.07.2021 to 30.07.2021 by **NITTTR, Chennai**.
3. Completed One-week **Online Elementary** FDP on "**THE INTERNET OF THINGS & EVERYTHING – IOT/IOE**" from **2021-07-26** to **2021-07-30** at **University Institute of Engineering, Chandigarh University, Mohali** and **AICTE Training and Learning (ATAL) Academy**

4. Two-weeks online faculty development programme on “Machine Learning Tools for IOT applications” held on **12-Jul-2021 to 22-Jul-2021** by **NIT Warangal and Institute of Aeronautical Engineering**
5. Completed “**Journal Citation Reports (JCR) certification series-2021**” conducted by Clarivate
6. **One week workshop on “R”** held on 21-Jun-2021 to 25-Jun-2021 conducted by **Vellore Institute of Technology, Chennai, India**
7. **Two days workshop on “Transformation Through NAAC Accreditation Process, A National Level Workshop for Higher Educational Institutions”** held on 21st & 22nd June 2021 conducted by “Institute for Academic Excellence, Hyderabad” in collaboration with “**Collegiate Education & Technical Education Department, Telangana State, India.**
8. **One week FDP on “Outcome Based Education”** conducted during 21-Jun-2021 to 25-Jun-2021 by **Kallam Haranadhareddy Institute of Technology (KHIT), Guntur, Andhra Pradesh, India.**
9. **One week FDP on “Research and Application Perspectives in Artificial Intelligence and Machine Learning”** conducted during 21-Jun-2021 to 25-Jun-2021 by **Sridevi Women’s Engineering College (SWEC), Hyderabad, India**
10. **One week workshop on “Digital Design ff FPGA Through Verilog”** conducted during **19<sup>th</sup> and 26th JUNE 2021** by **Siddhartha Institute Of Engineering and Technology, Ibrahimpatnam.**
11. Received an appreciation certificate for the National Level Online Quiz on ‘**PYTHON PROGRAMMING**’ organized by Department of Computer Science and Engineering, **Annamacharya Institute of Technology & Sciences (Autonomous), Rajampet, India**
12. **One week FDP on “Intellectual Property Rights”** conducted during 08-Jun-2021 to 12-Jun-2021 by **Gate Institute of Technology, Gooty, India**
13. **Three days FDP on “IPR & fundamentals of patent filling and prosecution”** conducted during 08-Jun-2021 to 10-Jun-2021 by **B.V.Raju Institute of Technology, Narsapur, India Intellectual Property Rights**
14. **Workshop on “Outcome Based Education”** conducted on 28th May 2021 by **Siddhartha Institute of Engineering & Technology, Ibrahimpatnam, India**
15. **Five days FDP on “Latest Trends in VLSI Design and Implementation using EDA tools”** conducted during 06-Apr-2021 to 10-Apr-2021 by **Narayana Engineering College, Nellore, India**
16. **One week STTP on “ FPGA based Digital System Design with HDL (Phase-I) ”** conducted during 25-Jan-2021 to 30-Jan-2021 by **Vel Tech Multi Tech Dr. Rangarajan Dr. Sakunthala Engineering college, Chennai**

- 17. Completed 30-days Webinar on “AI Master Class” conducted during 05-Oct-2020 to 03-Nov-2020 by Andhra Pradesh State Skill Development Corporation (APSSDC) and Pantech Prolabs India Pvt, Lab**
- 18. Four-Weeks FDP on “Practical Quantum Computing using Qiskit and IBMQ” conducted during 12-Sep-2020 to 04-Oct-2020 by E&ICT Academy IIT Roorkee**
- 19. Completed 30-days Webinar on “Matlab Master class series” conducted during 01-Sep-2020 to 30-Sep-2020 by IETE Mumbai and Pantech Prolabs India Pvt Lab**
- 20. Webinar on "Organic Electronics" conducted on 30-Sep-2020 by The National Academy of Sciences, India (NASI) – Delhi.**
- 21. Webinar on "Wireless AI: A New Sixth Sense to Deciphering our World" conducted on 30-Aug-2020 by The National Academy of Sciences, India (NASI) – Delhi.**
- 22. One-week STTP on “Optimization techniques in machine learning for wireless & IOT applications” from 24-Aug-2020 to 29-Aug-2020 by Malla Reddy Engineering College for Women, Hyderabad**
- 23. Online short-term FDP Course on “ICT tools for teaching learning process - post pandemic educational strategies” from 17 August to 23 August 2020, by Sree Narayana College Kollam in association with Kerala State Higher Education Council.**
- 24. Completed Online Summer School-cum-Faculty Development Program on “Advances in Signal Processing and Machine Learning” from 20-Jul-2020 to 26-Jul-2020 by MHRD-Institution Innovation Council, DDUC Chapter, Deen Dayal Upadhyaya College, University of Delhi**
- 25. Webinar on " Physics Does Digital Optimization- for Machine Learning, Control Theory, Back Propagation" conducted on 28-Jul-2020 by The National Academy of Sciences, India (NASI) – Delhi.**
- 26. Webinar on " BLDC Motor and Its Industrial Applications" conducted on 26-Jul-2020 by Vellore Institute of Technology, Chennai**
- 27. Webinar on " Innovation: What, Why and How?" conducted on 19-Jul-2020 by IEEE Bangalore Section, Bangalore.**
- 28. Two Weeks Online FDP on "Machine Learning for Computer Vision" from 29-Jun-20 to 08-Jul-2020 by EICT Academy, MNIT Jaipur.**
- 29. Online FDP on " Deep Learning and its Applications" from 22-Jun-20 to 30-Jun-20 by EICT, IIT Roorkee.**
- 30. Webinar on "Indo-German Bilateral Funding Programmes for Advanced Industrial Research" conducted on 26-June-2020 by Dr. B. R. Ambedkar National Institute of Technology, Jalandhar, Punjab.**

- 31. Webinar on " AI Applications in Electrical Power Industry" conducted on 23-Jun-2020 by RMD Engineering College, Chennai.**
- 32. Webinar on “The step-by-step guide how to write a journal article within 3 months” conducted from 18-Jun-2020 to 23-Jun-2020 at Chase technologies.**
- 33. Online FDP on " Deep Learning and its Applications" from 17-Jun-20 to 22-Jun-20 by EICT, NIT Patna.**
- 34. Webinar on “How to Write Effective and Successful Research Funded Projects” conducted on 22-Jun-2020 by Power Innovative Research Consultancy, Chennai.**
- 35. Webinar on “Art and Challenges of Writing Papers for IEEE Transactions” conducted on 08-Jun-2020 by IEEE Bangalore Section, Bangalore.**
- 36. Webinar on “Research Challenges & career Opportunities in VLSI” conducted on 06-Jun-2020 at NBKR Institute of Science & Technology, Nellore.**
- 37. Online FDP on “AWS Cloud Computing Services” conducted on 03-Jun-2020 at JBREC, Hyderabad.**
- 38. Online FDP on "Machine Learning and AI using Python" from 27-Apr-20 to 06-May-20 by EICT IIT Roorkee.**
- 39. Online Course on “Programming for Deep Learning and Machine Learning Algorithms” conducted from 02-Apr-2020 to 07-Apr-2020 at Chase technologies.**
- 40. National Seminar on “Recent Trends in Future 5G technology” conducted from 10-Dec-2019 to 12-Dec-2019, at Vel Tech High Tech Dr.Rangarajan Dr.Sakunthala Engg College.**
- 41. Workshop on Intellectual Property Rights and Innovation conducted on 08-08-2018, at JERUSALEM College of Engineering.**
- 42. FDTP on VLSI DESIGN conducted from 06-12-2017 to 13-12-2017, at Department of ECE, Vel Tech Multi Tech Engineering College.**
- 43. Workshop on “Succeeding in Research” conducted from 09-Nov-2017 to 10-Nov-2017 in Vel Tech University**
- 44. Workshop on Digital and Custom IC Design using CADENCE conducted from 17-Oct-2014 to 18-Oct-2014 at MIT Campus, Anna University, Chennai.**
- 45. FDP on VLSI DESIGN conducted from 09-12-2013 to 15-12-2013 at MIT Campus, Anna University, Chennai.**
- 46. SEMINAR on ANALOG IC DESIGN from 14-09-2012 to 15-09-2012 at MIT Campus, Anna University, Chennai.**

**47. WORKSHOP** on **Simulation of Advanced Networks using NS-2 (WSAN'11)** from 02-Dec-2011 to 03-Dec-2011 at **MIT Campus, Anna University, Chennai.**

**48. FDP** on **Advanced VLSI Design** from 17-Nov-2011 to 19-Nov-2011 at **SSN College of Engineering, Chennai.**

**49. FDP** on **Recent research areas in communication and networking** from 11-Nov-2011 to 12-Nov-2011 at **Vel Tech Multi Tech Dr.Rangarajan Dr.Sakunthala Engineering College, Chennai.**

### **SUBJECTS THOUGHT:**

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1. Digital Electronics
2. Electronic Circuits
3. Digital Signal Processing
4. VLSI Design

### **AREA OF EXPERTISE:**

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1. Electronic circuit simulation with SPICE software.
2. Signal Processing with MATLAB.

### **CERTIFICATE COURSES:**

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1. Completed **One-week Lead Auditor Course** on “Environment Management System, Green Campus Audit, Energy Audit and Hygiene Audit” to Educational Institutions and Industrial sectors organized by the Nature Science Foundation, Coimbatore, TamilNadu, India from 23-08-2021 to 27-08-2021.
2. Completed **one year** certificate course on “ **Introduction to Quantum Computing Course**” from IBM Quantum.
3. Completed a certificate course on “**Machine Learning with Python-From Linear Models to Deep Learning**” from **Massachusetts Institute of Technology (MIT)**.
4. Completed a certificate course on “**Fundamentals of Deep Learning for Computer Vision**” from **NVIDIA Deep Learning Institute**.
5. Completed a certificate course on “**Fundamentals of Deep Learning for Multiple Data Types**” from **NVIDIA Deep Learning Institute**.
6. Completed IBM Data Science Professional Certificate Course on “**Machine Learning with Python: A Practical Introduction**”.

7. Completed a certificate **Course on Python for Beginners by E&ICT Academy and IIT Roorkee.**
8. A Certificate **Course on “VLSI Design Engineering Specializing in Layout Design” by University of California Extension, Santa Cruz.**

## **PROFESSIONAL MEMBERSHIP:**

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1. IEEE Membership: Senior Member - 93949687
2. IETE Membership: Fellow - F-225108.
3. ISTE Membership: Life Member - LM 74537
4. InSc Membership: Life Member – InSc20210554
5. IAENG Membership: Life Member- 289797
6. IFERP Membership : Life Member - PM69452781

## **AWARDS AND RECOGNITIONS**

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- Selected as a Mentor for IEEE Anantapur Subsection -2024
- **Selected as a volunteer of IEEE MOVE INDIA EDUCATION COMMITTEE - 2021**
- **Received a certificate of appreciation for guidance of student projects in “5th National Level IEEE Project Competition-2021”** Organized by IEEE Student Branch (STB17861), GSSSIETW in association with IEEE Bangalore Section and IEEE Mysore Subsection on **26th June 2021**.
- **Received “Young Researcher Award -2021” from Institute of Scholars, Bengaluru, India**
- **Recognized reviewer of following peer reviewed journals**
  - IET Electric Power Applications
  - IEEE Transactions on Instrumentation & Measurement
  - Advances in Science, Technology and Engineering Systems Journal (ASTESJ) (ISSN: 2415-6698) (Reviewer Code: RVELE0490)
  - Journal of Electrical and Electronic Engineering (JEEE); ISSN: 2329-1613 (Print); ISSN: 2329-1605 (Online); <http://www.sciencepublishinggroup.com/j/jeee>”.
  - International Journal of Electronics, Electrical and Communication Engineering-InSc
- **Acted as external reviewer for the following international conferences**
  - **IEEE International Conference on Distributed Computing and Electrical Circuits and Electronics ICDCECE- 2022** *Organized by Ballari Institute of Technology and Management, Ballari, Karnataka* during on 23rd-24th April, 2022.

- International Conference on Electrical, Computer and Energy Technologies (ICECET-2021) held on 9 Dec, 2021 – 10 Dec, 2021, **Cape Town, South Africa**.
- IEEE International Conference on Electrical, Computer, Communications, and Mechatronics Engineering (ICECCME 2021), held on 07-08 October 2021, at **Mauritius**.
- 3<sup>rd</sup> IEEE Sponsored International Conference on Signal Processing and Communication (ICSPC 2021) held on 13, 14 May 2021 at Karunya Institute of Technology and Sciences, **Coimbatore, Tamil Nadu, India**.

## ACCOMPLISHMENTS:

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### NPTEL Courses Completed

S.NO	Name of the Course	Duration of Course	Sem/Year	Marks(%)	Certificate Received
1.	Python Programming	12 Weeks	Jan-Jun-2024	<b>84</b>	<b>Elite</b>
2.	The Joy Of Computing Using Python	12 Weeks	Jul-Dec/2023	65	<b>Elite</b>
3.	Introduction To Machine Learning	12 Weeks	Jul-Dec/2023	52	<b>Pass</b>
4.	Machine learning -ML	8 Weeks	Apr-May/2023	<b>64%</b>	<b>Elite</b>
5.	Data Analytics with Python	12 Weeks	Apr-May/2023	<b>66%</b>	<b>Elite</b>
6.	Machine Learning For Soil And Crop Management	12 Weeks	Apr-May/2023	<b>65%</b>	<b>Elite</b>
7.	Analog Electronic Circuits	12 Weeks	Jul-Dec/2022	<b>71%</b>	<b>Elite + Silver</b>
8.	Introduction to Machine Learning	12 Weeks	Jul-Dec/2022	<b>51%</b>	<b>Pass</b>
9.	Outcome Based Pedagogic Principles for Effective Teaching	4 Weeks	Jan-Jun/2022	<b>67%</b>	<b>Elite</b>
10.	Digital Electronic Circuits	12 Weeks	Jan-Jun/2021	<b>77%</b>	<b>Elite + Silver</b>
11.	Python for Data Science	4 Weeks	Jan-Jun/2021	<b>70%</b>	<b>Elite</b>
12.	Patent Drafting for Beginners	4 Weeks	Jan-Jun/2021	<b>56%</b>	<b>Pass</b>

1. Qualified in Faculty Eligibility Test (FET-2010) conducted by JNTU-Hyderabad.

## **PERSONAL DETAILS:**

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1. Orchid ID : <https://orcid.org/0000-0002-3461-0355>
2. Scopus ID : 57201358483
3. Web of Science Researcher ID : J-1889-2018
4. Linkedin : [www.linkedin.com/in/madhusudhana-reddy-barusu-a3964216](http://www.linkedin.com/in/madhusudhana-reddy-barusu-a3964216)

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