



## Dr. MEGHA MAHESH WANKHADE

Assistant Professor, Department of E & TC

 mmwankhade.scoe@sinhgad.edu

### OVERVIEW:

**Qualifications:** Ph.D.(E&TC), ME (E&TC), BE (E&TC)  
**Experience:** Teaching -21 years  
**Date of Joining STES:** 15/07/2003  
**Skills and Proficiencies:** IoT, Artificial Intelligence, Machine Learning, WSN, MATLAB

### SIGNIFICANT ACHIEVEMENTS:

- AVISHKAR 2019: Participated in University Level Research Competition AVISHKAR 2019 held on 21<sup>st</sup> January 2020 and presented a Research project at Ph. D Category.
- Certificate of Achievement for Outstanding Contribution in Content Development of “IT OLYMPIAD 2017” A Multilayer Examination and Mega Quiz Contest by Computer Society of India and Rotary Club of Pune Pride on a National level.
- Topper at the 12 Week NPTEL Course on “Introduction to Internet of Things” with consolidated score of 90% from January to April 2024.
- Certificate of Appreciation for good subject result of Electronic Devices & Circuits for academic year 2015-16 on 3<sup>rd</sup> Feb. 2016.
- Received outstanding performance during the academic year 2007 – 08, Letter ref. no. SCOE/2007-08/703 dated 18<sup>th</sup> November 2008.

### AREA OF EXPERTISE /RESEARCH INTERESTS:

Biomedical signal processing, Video surveillance and Brain-Computer Interface.

### NUMBER OF STUDENTS GUIDED:

- PG – 12, UG – 25+ Groups

### RESEARCH PULICATIONS:

#### Publication Summary:

Scopus/ SCI-05

International Journal & Conferences: 19

h-index : 02

i10 index : 02

<https://scholar.google.com/citations?user=Fcw-HzkAAAAJ&hl=en>

### FUNDED RESEARCH PROJECT:

1.Co-Investigator - Research grant of Rs. 510000/- under RPS, AICTE New Delhi for the project titled 'Path Finder: RFID based guide system for blind navigation" for Year 2011-13. (File No: 8023/RFID/RPS-132(Pvt)/2011-12).

Amount Received: 5100000/-

Duration: 2011-13

Funding Agency: AICTE, New Delhi

2. Principal-Investigator, Research grant of Rs. 100000/- under BCUD, University of Pune for the project titled"Tracking of Persons for Video Surveillance of Unattended Environment" for Year 2011-13. Letter No: BCUD/OSD/390 dated 27-10-2010.

Amount Received: 100000/-

Duration: 2011-13

Funding Agency: BCUD, University of Pune.

Publications:

1. *Pradnya V. Kamble, Megha M.Wankhade, "A Real Time Object Tracking System for Visual Surveillance", Second International Conference on Emerging Trends in Engineering (SICETE) Dr.J.J.Magdum College of Engineering, Jaysingpur on 22 and 23 Feb 2013.*
2. *Megha Khandare(Wankhade), M.P. Wankhade, " Tracking of persons for video surveillance of unattended environment" Innovation- 2013 Regional research conference for Pune university teachers held at JSPM's Rajashri Shahu College of Engineering, Pune on 18<sup>th</sup> April 2013.*

## RESEARCH WORK:

### Phd Research Work:

- A simulation model is developed for motor-impaired persons as an assistive technology. Artifacts are identified and removed efficiently using Bandpass filtering, Common average referencing, and Surface Laplacian.
- Working of Motor imagery BCI is enhanced by making use of optimized electrodes. Holo-Entropy-based WPD feature extraction technique is implemented to improve the performance of motor imagery signals.
- PROA-based RideNN is developed for the effective classification of motor tasks and results are compared with state of art classifiers. There is significant improvement in the performance parameters using the proposed simulation model. This research contributes to the development of a simulation model for motor-impaired persons as an assistive technology.

## NOTABLE GUIDED PROJECTS:

### PG projects:

- Interference Management in Visible Light Communication Networks. (AY 2017-18)
- A Novel Tree-based Power Saving Scheme for WSN with mobile sink. (AY 2016-17)

- Textual Metadata Retrieval of Lecture Videos Using Optical Character Recognition. (AY 2014-15 )
- Tracking of persons for video surveillance of unattended environment. (AY 2012-13)
- Face Recognition using Discrete Wavelet Transforms. (AY 2011-12)

**UG projects:**

- Face Detection based door lock (AY 2021-22)
- Motor Imagery EEG signal processing and Classification using Machine Learning approach. (AY 2021-22)
- Deep Learning approach for Suspicious activity detection. (AY 2023-24)
- Underwater Wireless Optical Communication. (AY 2023-24)
- Battery Management system in Electric Vehicle. (Ongoing AY 2024-25)
- Classification of Brain signals for Movement Control. (Ongoing AY 2024-25)

**RESOURCE PERSON TO INDUSTRY/ACADEMIA:**

- Reviewer and Session chair of 6th IEEE International Conference on “Emerging Smart Computing & Informatics” (IEEE ESCI-2024) 5<sup>th</sup>–7<sup>th</sup> March 2024, Technically Co-Sponsored by IEEE Organized by All India Shri Shivaji Memorial Society’s Institute of Information Technology, Pune– 411001, Maharashtra, India.
- Reviewer of National Conference on Pervasive Computing (NCPC)-2024 organized by Dept. of E&TC, SCOE, Pune on April 05, 2024.
- Judge for “IDEASARK: Project Based Learning Competition” organized by Dept. of Computer Engineering on 16<sup>th</sup> April 2024.
- Resource Person for the subject “Principles of Communication Systems” at NBN School of Engineering Pune, on 3-4 April 2024.
- Judge for B.E. Project competition at All India Shri Shivaji Memorial Society’s Institute of Information Technology, Pune on 28/04/2023.

**SUBJECTS TAUGHT:**

- Digital Communication Receivers (ME (E&TC-Communication Network))
- Modernized Internet of Things (BE(E&TC))
- Artificial Intelligence (BE(E&TC))
- Wireless Sensor Networks (BE(E&TC))
- Wireless Networks (BE(E&TC))
- Digital Communication (TE(E&TC))
- Information Theory & Coding Techniques (TE(E&TC))
- Communication Theory/Analog Communication/Principles of Communication Systems (SE(E&TC))
- Electronic Devices & Circuits (SE(Computer))
- Solid State devices & Circuits (SE(E&TC))
- Network Theory (SE(E&TC))
- Basic Electronics Engineering (FE)

### **FDP/STTP/SDP/WORKSHOPS ORGANIZED AS A COORDINATOR:**

- Worked as Program Committee Chair: International Conference on Pervasive Computing(ICPC) jointly organized by Dept. of E&TC, Computer Engineering and Information Technology, Sinhgad College of Engineering, Pune in association with SPPU during Feb.13<sup>th</sup> -14<sup>th</sup> 2020.
- Worked as Organizing Committee member: National Conference on Pervasive Computing organized by E&TC Dept. Sinhgad College of Engineering, Pune during Feb. 27<sup>th</sup> -28<sup>th</sup> 2018.
- Worked as Organizing Committee member: One week Faculty Development Program on Advances in Wireless and Mobile Technologies organized by Dept. of E&TC Sinhgad College of Engineering Pune in association with Tektronix- Keithley, during June 7<sup>th</sup>-11<sup>th</sup> 2016.
- Worked as Organizing Committee member: One week Faculty Development Program on RF System & Design organized by Dept. of E&TC Sinhgad College of Engineering Pune during Dec. 7<sup>th</sup>-11<sup>th</sup> 2015.
- Worked as Organizing Committee member: International Conference on Pervasive Computing organized by E&TC Dept. Sinhgad College of Engineering, Pune during Jan. 8<sup>th</sup> -10<sup>th</sup> 2015.
- Worked as Co-Coordinator: IETE approved One week Faculty Development Program on Emerging Technologies in Audio & Video organized by Dept. of E&TC Sinhgad College of Engineering, Pune during June 9<sup>th</sup>-13<sup>th</sup> 2014.
- Worked as Program Committee Member: National Conference on Latest Trends in Electronics & Telecommunication NCLTE-2013 under QIP, BCUD, University of Pune organized by Dept. of E&TC, Sinhgad College of Engineering, Pune during Oct. 23<sup>rd</sup> -24<sup>th</sup> 2013.
- Worked as Organizing Committee member: Two-week AICTE sponsored Staff Development Program on Neural Network Design from June 13<sup>th</sup>-25<sup>th</sup> 2011.
- Worked as Program Committee Member: National Conference on Pervasive Computing organized by Dept. of E&TC, Sinhgad College of Engineering, Pune during April 9<sup>th</sup> -10<sup>th</sup> 2010.

### **CONFERENCES ATTENDED:**

- *Wankhade M.M. and Chorage S.S.* “Eye-Blink artifact Detection and Removal Approaches for BCI using EEG” , 6<sup>th</sup> IEEE International Conference on Recent Trends on Electronics, Information, Communication and Technology, RTEICT 2021 during 27<sup>th</sup> – 28<sup>th</sup> August 2021, pp. 718–721.
- *Wankhade M.M. and Chorage S.S.* “Motor Imagery based EEG signal classification using electrode optimization methodology” , 2<sup>nd</sup> IEEE International Conference on Emerging Smart Computing & Informatics( IEEE-ESCI 2020) during 12<sup>th</sup> -14<sup>th</sup> March 2020.
- *Arjun Patil, M. M. Wankhade,* “Energy Efficient AODV Routing Protocol for Mobile ADHOC Networks”, 1<sup>st</sup> Int. Conf. on Technovision - 2014, Sinhgad Technical Education Societies SITS Narhe, Pune, Apr. 5-6, 2014.
- *Pradnya V. Kamble, Megha M.Wankhade,* “A Real Time Object Tracking System for Visual Surveillance”, Second International Conference on Emerging Trends in Engineering (SICETE) Dr.J.J.Magdum College of Engineering, Jaysingpur on 22 and 23 Feb 2013.
- *Megha Khandare, M.P.Wankhade,* “ Tracking of persons for video surveillance of unattended environment” Innovation- 2013 Regional research conference for Pune university teachers held at JSPM’s Rajashri Shahu College of Engineering, Pune on 18<sup>th</sup> April 2013.

- *Pallavi Wadkar, M.M. Wankhade*, “Face recognition via subband transform”, *International Conference on Advances in Computing and Management* on 6-8 January -2012, pp 276-280, ISBN : 978-81-921768-0-2
- *Deepali Yewale, M.M.Wankhade*, ,“ Remote supervisory control and acquisition through reconfigurable board,” *International Conference on Instrumentation & National Symposium on Instrumentation(ICI 2009)* organized by CCOE for Women, Pune on 21-23 January 2010.
- *M.V.Khandare(M.M.Wankhade) and M.S.Sutaone* ,“ Image Based Steganography using LSB Insertion Technique,” *The IET, International Conference on Wireless, mobile and multimedia networks* at Mumbai on 11-12th January 2008.

#### **FDP/STTP/SDP ATTENDED:**

- AICTE/IETE Sponsored One week and Two Weeks FDPs - 8
- TEQIP Sponsored- 4
- NPTEL Programs - 4
- Others- 14

#### **RESPONSIBILITIES HANDLED AT STES/SCOE/DEPT:**

##### **Society Level**

- Organizing committee member for International Telecommunication Union (ITU)International Conference (ITU) held at Narhe Campus
- Committee Member: Sinhgad Karandak, (2015)

##### **Institute Level (SCOE)**

- Worked as Facilitation Centre Coordinator for Direct second year engineering for 2 Years.
- Worked as Information Brochure Coordinator for Academic year 24-25.
- Worked as Taluka Co-Ordinator for Mission Admission Cell.
- Organizing committee member for NAAC.
- Organizing committee member for Graduation Ceremony.

##### **Department Level (E&TC)**

- Working as Department Alumni Coordinator since 2003.
- Working as Faculty Data Coordinator.
- Working as In-charge of Lab Maintenance Committee.
- Worked as a Member of NBA PEO Committee.
- Worked as a Faculty Mentor for Treasure Hunt event in Sinhgad Spring Fest 2024.
- Worked as Timetable coordinator.
- Project Guide & Project evaluation Committee Coordinator for BE & ME students
- Involved in PG admission process.
- Worked as a Coordinator of Graduation Ceremony.
- Teacher Guardian, Class Teacher.
- Organizing committee member for various Staff Development Programs & National, International Conferences.
- Project Guide for BE & ME students.
- NBA committee member.
- Departmental Techtonic Event Coordinator (Event Doodle It)

#### **DECLARATION:**

I hereby declare that all the above information furnished by me are true to the best of my knowledge.

Date: / / 2024

Signature