

Name of Teaching Staff : Dr. Vishakha Vivek Kelkar  
Designation : Associate Professor  
Department : Electronics & Telecommunication Engineering  
Date of Joining the Institution : 16.10.2006  
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Google Scholar Link : <https://scholar.google.com/citations?user=2CErg1wAAAAJ&hl=en>  
Researchgate Link: <https://www.researchgate.net/profile/Vishakha-Kelkar-2>



ORCID

Qualifications with Class / Grade : 1. Ph.D. in Electronics & Communication Engineering from SNDT Women's University on Topic "Investigation of Watermarking Techniques for Medical Images"  
2. M.E. – Electronics Engineering from University of Mumbai in May 2003, 1<sup>st</sup> class with Distinction 73.88%.  
3. B.E. (Electronics Engineering) from University of Mumbai in June 1992, 1<sup>st</sup> class 63.3%.

Total Experience in Years : **Teaching: 26 years**  
1. Assistant Professor, D.J. Sanghvi College of Engineering from 16.10.2006 till date.  
2. Senior Lecturer, Thadomal Sahani Engineering College, from January 1999 to October 2006  
3. Lecturer, Premilila Vithaldas Polytechnique, SNDT University from July 1993 to December 1996.

Papers Published in Journal: : **International: 3**  
1. Kelkar, Vishakha, and Kushal Tuckley. "Performance Evaluation of DCT Based Watermarking with Fuzzy Based Blind and Non Blind Techniques for Medical Images." Journal of Seybold Report ISSN NO 1533: 9211, Volume 15 - Issue 9 - 2020.  
2. Kelkar, Vishakha, Kushal Tuckley "Novel variants of a histogram shift-based reversible watermarking technique for medical images to improve hiding capacity." Journal of healthcare engineering 2017 (2017)  
3. Kelkar, Vishakha, and Kushal Tuckley. "DCT based reversible watermarking technique for Medical Images with improved quality of watermarked image." International e-Conference on Recent Trends in Electronics, Computing and Communication Engineering, Journal of Critical Reviews 7.5 (2020): 1433-1439.

**International:**

1. Patki, Priti Sudhir, and Vishakha V. Kelkar. "Classification using Different Normalization Techniques in Support Vector Machine." ICCT-2013 ISSN is 0975-8887 and ISBN is 973-93-80877-86-5.
2. Kar, Shivali A., and Vishakha V. Kelkar. "Supervised and Unsupervised Neural Network for Classification of Satellite Images." ICCT-2013 ISSN is 0975-8887 and ISBN is 973-93-80877-86-5.
3. Kulkarni, Shivali, and Vishakha Kelkar. "Classification of multispectral satellite images using ensemble techniques of bagging, boosting and adaboost." Circuits, Systems, Communication and Information Technology Applications (CSCITA), 2014 International Conference on. IEEE, 2014.
4. Avasare, Minal, and Vishakha Kelkar. "Image Encryption using Chaos Theory." International Journal of Global Technology Initiatives 3.1 (2014): B135-B142.
5. Avasare, Minal Govind, and Vishakha Vivek Kelkar. "Image encryption using chaos theory." Communication, Information & Computing Technology (ICCICT), 2015 International Conference on. IEEE, 2015.
6. Save, Pallavi N., and Vishakha Kelkar. "An Improved Image Compression Method using Vector Quantization for Color Images." International Conference on Computer Technology (ICCT 2015)
7. H. S. Nemade, V. Kelkar "Reversible Watermarking for colored Medical Images Using Histogram Shifting Method," 2016 IEEE 3rd Int. Conf on Comp for Sust Glob Devt pp. ISBN 978-93- 80544-20- 5, 3914–3918, 2016.
8. V. Kelkar, H. S. Nemade "Reversible Watermarking In Medical Images Using Histogram Shifting Method with Improved Security and Embedding Capacity." 2016 IEEE International Conference on Recent Trends in Electronics, Information & Communication Technology.
9. Kelkar, Vishakha, Jinal H. Mehta, and Kushal Tuckley. "A Novel Robust Reversible Watermarking Technique Based on Prediction Error Expansion for Medical Images." Proceedings of 2nd International Conference on Computer Vision & Image Processing. Springer, Singapore, 2018.
10. Mehta, Jinal H., and Vishakha Kelkar. "Comparison of reversible watermarking using prediction error expansion and prediction error expansion considering region of interest for medical images." Convergence in Technology (I2CT), 2017 2nd International Conference for. IEEE, 2017.
11. Mehta, Jinal H., Vishakha Kelkar, and Kushal Tuckley. "A robust reversible watermarking technique based on prediction error expansion using ECC." Advances in Computing, Communications and Informatics (ICACCI), 2017 International Conference on. IEEE, 2017.
12. Kelkar, Vishakha, and Kushal Tuckley. "Reversible watermarking for medical images with added security using chaos theory." 2018 3rd International Conference on Communication and Electronics Systems (ICCES). IEEE, 2018.

13. Kelkar, Vishakha, A. S. Revathi, and Kushal Tuckley. "Analysis of Different Font Types and Sizes for High Quality Watermarked, Extracted Watermark and Medical Images Using HS Based Reversible Watermarking." 2019 10th International Conference on Computing, Communication and Networking Technologies (ICCCNT). IEEE, 2019.
14. Fernandes, S., Vashi, H., Shetty, A. and Kelkar, V., 2019, December. Adaptive Contrast Enhancement using Fuzzy Logic. In 2019 International Conference on Advances in Computing, Communication and Control (ICAC3) (pp. 1-6). IEEE.

Area of Specialization

**Machine Learning**  
**Image Processing**  
**Data Compression and Security**

Professional Memberships

: Life Member of ISTE  
 Life Member of IETE

Membership No.: LM34950  
 Membership No.: M14651

Subjects Taught

**UG Level:**

- Image Processing and Machine Vision
- Data Compression and Encryption
- Neural Networks and Fuzzy Logic
- Probability and Random Processes
- Microprocessors and Microcontrollers
- Computer Organization and Architecture
- ADIC

**PG Level:**

- Statistical Signal Processing
- Network and Cyber Security

## Projects Guided

### : **UG Level:**

- Line tracking Humanoid Robot
- Stock market prediction using ensemble of neural networks
- Programmable microfluidics using microcontroller
- Prediction of present value of bank bonds using ensemble neural network
- High precision robotic arm for sorting and stacking of goods using computer vision
- Digital water marking technique for medical images.
- Wearable Fitness Band using FRDM board and sensors like accelerometer & gyro meter
- Pothole detection using accelerometer and GPS
- Autonomous surveillance robot using simultaneous localization and mapping
- Self and secure parking car
- Aiding Mergers and acquisitions using Neural Networks
- Raag Identification using TensorFlow
- Smart garbage management system
- Self-driving car using Rpi
- Gesture Control based Robotic Arm
- Crack Detection System using Unmanned Aerial Vehicles and digital Image Processing

### **PG Level:**

- Fractal Image Compression,2007
- Multi Spectral Satellite Image Classification using Neural networks,2014
- Multi Spectral Satellite Image Classification using SVM, 2014
- Image Encryption using Chaos Theory,2015
- Image Compression using DCT and Vector quantization, 2015
- Reversible watermarking for Medical Images using Histogram Shift Technique, 2017
- Reversible watermarking for Medical Images using Prediction Error expansion, 2018

Recommended Students for  
Higher Education

**Name of the Student**

**Mayank Ambaliya**

**Bhagya Parekh**

**Naineel Shah**

**Chintan Buch**

**Poras Singaporla**

**Zeel Thakkar**

**Hrishikesh Jadhav**

**Yash Parekh**

**Keval Kamdar**

**Shraddha Sutar**

**Ushita Palande**

**Siddhesh Jagtap**

**Shane Fernandes**

**Bhavy Sakhani**

**Harshini Patani**

**Elton Rodrigues**

**Aishwarya Acharya**

**Abhishek Bane**

**Bhavin Shah**

**Suhrid Subramaniam**

**Heetika Gada**

**Kashish Shah**

**Dishay Shah**

**University/Industry**

**CMU**

**Columbia University**

**Northeastern University**

**Georgia Institute of Technology**

**CMU**

**Stevens Institute of Technology**

**Columbia University**

**University of Maryland**

**Georgia Institute of Technology**

**University of Illinois Urbana**

**Champaign**

**University of Southern California**

**Arizona State university**

**Purdue University**

**University of Michigan, Ann Arbor**

**Cornell Tech**

**University of Wisconsin Madison**

**University of California, Berkley**

**Indiana University, Bloomington**

**Boston University**

**University of California, SanDiago**

**Columbia University**

**Northeastern University**

**University of Illinois Urbana**

**Champaign**

Institute/Department  
Responsibility handled:

- NPTEL SPOC for the college
- DJSCE IBM Advanced Technology Course Coordinator SPOC
- NAAC Coordinator for EXTC Department
- NBA Coordinator for EXTC Department
- Member of Admission committee from 2008 to 2016
- Co-Chair of Library Committee from 2010 till date
- Member of Women's Development Cell