

Dr. Shubhangi Katti

Present position

- Associate Professor

Contact Details (Mention e-mail) – fergusson.edu or despune.org



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Shubhangi.katti@fergusson.edu



Work Experience

- Teaching: 35 years
- Research/Industrial: 22 years

Personal Profile

Educational Qualifications

B.Sc. Physics 1985

M.Sc. Physics(Adv. Electronics) 1987

ADCSSAA 1997

Ph.D. Electronic Science 2021

Research Papers Published in National/International Journals 16

Research Papers Published in Conference Proceedings 5

Research Papers Presented in Conference/ Symposium/Workshops 8

International Projects Completed 3

National Level Projects Completed 3

International Project Ongoing 1

Exhibited Research Project at Hannover Trade Fair, Germany

Area of Research Interest : Embedded Systems, Machine Vision, IoT Based Application Design

Course(s) Taught (Only Titles)

1. Microcontrollers
2. Embedded Systems
3. IoT and Applications
4. Microwave Devices
5. Modern Communication Systems
6. Design with linear ICs
7. Physics of Semiconductor Devices
8. Circuit Theory and Network
9. Consumer Electronics

10. Process Control
11. 11. Foundations of Nanoelectronics
12. 12. Digital Electronics
13. 13. Microprocessor
14. 14. Quantum Mechanics and Statistical Mechanics

Field of Specialization/Areas of Interests

- Programming: MATLAB, Python, C, Embedded C, VHDL, Verilog
- Embedded System application design
- Machine Vision

Education

- **Ph.D. – Electronic Science:** from 2015 to 2021
Title of the Thesis: Machine Vision for Classification of Used Electronic Components To Promote Reuse And Reduction of E waste
Name of University / Institution: Savitribai Phule Pune University , Pune
Year of Award 2021
- **Master of Science/Arts- Physics:** year 1987
 University/College Shivaji University, Kolhapur
- **Bachelor of Science- (subject name):** 1985
 College, University Place Vivekanand College, Shivaji University, Kolhapur

Fellowship/Awards/ Certifications/Achievements/Recognitions

1. ADCSSAA

Member of College Committees/ Professional Bodies and Others

College Level	Professional Bodies	Others
•	Life member SPEED	Member: BOS, Electronic Science, FCP
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Employment History

Example:

- 1) **Organization** : Vivekanand College, Kolhapur
Role : Lecturer in Senior College, Electronics
Duration : 1987 to 1990

Responsibilities	<ul style="list-style-type: none">• .•
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- 2) **Organization** : -----
Role : -----
Duration : -----

Responsibilities	<ul style="list-style-type: none">• .•
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Research Projects

Title of the Project	Name of Funding Agency	Amount (Rs)	Duration (Year) (From To)	Type (Minor/Major)	Outcome
1. Optical fiber based signal transmission system	UGC	50,000	1999 to 2001	Minor	Use of optical fiber in ellipsometer
2. Educational Tool for Teaching preliminary Digital Electronics	UGC	50,000	2005 to 2007	Minor	Self learning tool
3. Microprocessor based Solar Tracking System	BCUD, SPPU, Pune	1,5000	2006 to 2008	Minor	Development of Applications
4. Solar Powered on chip Digital Electronics Laboratory	Phoenix Contact , Germany	2,10000	2011 to 2012	Major	Remote Laboratory
5. Educational tool for Identification of Electronic Components	Phoenix Contact, Germany	2,10000	2014 to 2015	Major	E waste management awareness
6. Vision based Medical Assistant for Elderly and Visually Impaired People	Phoenix Contact, Germany	3,20000	2017 to 2018	Major	Healthcare Application Development
7. Smart Assistant for Neurologically Impaired Residents	Phoenix Contact, Germany	3,20000	Ongoing 2022-2023	Major	Health care application development

1. Shubhangi Katti, Jayant Khedkar, Sachine Khedkar, Madhukar Zambare, Nitin Kulkarni, Arvind Shaligram. Design of Optical Fiber Transmission System for an Ellipsometer. Journal of Instrument Society of India. 2001
2. Shubhangi Katti, Meghana Palkar. Microcontroller Based Digital Electronics Laboratory: Teaching and Learning Aid. 4th International Technology, Education and Development Conference (INTED 2010). Valencia, Spain. 2010
3. Shubhangi Katti. Virtual Digital Electronics Laboratory. 4th International Technology, Education and Development Conference (INTED 2010), Valencia, Spain. 2010
4. Shubhangi Katti, Deepali Dhainje, Nanda Kamble. Design and development of Embedded System Based Assessment and Evaluation Tool for Marathi Language. EDULEARN11: 3rd International Conference on Education and new learning Technology. 2011
5. Shubhangi Katti, Ujjwala Deshmukh. Mobile Classroom using GSM/GPRS Modem. INTED 2011: 5TH International Technology, Education and Development Conference. 2011 Valencia, Spain
6. Shubhangi Katti, Deepali Dhainje, Nanada Kamble. Role of Internet and Information Technology in Quality Improvement of Backward Class Women in India. INTED 2011: 5TH International Technology, Education and Development Conference. INTED 2011: 5TH International Technology, Education and Development Conference, Valencia Spain. 2011
7. Deepali Dhainje, Shubhangi Katti, A.R. Dani. International Journal of Advances in Management , Technology ,and Engineering Sciences. 2012, 1(12)
8. Shubhangi Katti, Deepali Dhainje, A.R. Dani. Recognition And Matching of Color Coded Thin film Resistor in a group of Electronics Components Using Image Segmentation Techniques. International Journal of Advances in Management , Technology ,and Engineering Sciences. 2012.1(12).
9. Shubhangi Katti, A. R. Dani. Identification of Electrolytic Capacitors Using Image Segmentation. IICMR Research Journal I⁴. 2013, 7(2) ,5 to 8
10. Shubhangi Katti, Jayant Khedkar, Nitin Kulkarni. GSM Controlled Remote Microcontroller Laboratory. International Journal of Computer Technology and Applications. 2014.5(2) 781-785
11. Shubhangi Katti, Nitin Kulkarni. Machine Vision for Identification of Used Color Coded Inductor. Speed Journal of Research in Electronics. 2016. 63 to 66.
12. Shubhangi Katti, Nitin Kulkarni. Profile based classification of Capacitors for reuse. 2017 IEEE International Conference on Power, Control, Signals and Instrumentation Engineering. 2017
13. Shubhangi Katti, Nitin Kulkarni. Classification of Color Coded Resistors Based on Power Rating. International Journal of Advanced Research in Computer Science 2018, 9(3)
14. Shubhangi Katti, Nitin Kulkarni. Classification Used Electronic Components based on Circular Hough Transform. International Journal of Research in Electronics and Computer Engineering, 2019, 7(1)
15. Shubhangi Katti, Nitin Kulkarni. Machine Vision for classification of Used Resistors. International Journal of Modern Electronics and communication Engineering, 2019, 7(1),

16. Shubhangi Katti, Nitin Kulkarni and Arvind Shaligram. Automated Sorting of Used Electronic Components. **AIP Proceedings 2021**, 2335

Participation in Conferences/Seminars/Symposia/Workshop:

1. Shubhangi Katti, Simulation of fixed and Rotated Solar Panel, 32nd National Symposium on Instrumentation (NSI-32), National Symposium on Instrumentation, K.S. Rangasamy College of Technology and Instrument Society of India, October 2007
2. Meghana Palkar, Shubhangi Katti. E learning: A changing Trend.. “INNOVATION-2007”, Regional Conference, University of Pune, November 2007
3. Shubhangi Katti, Jayant Khedkar. Software Development for Microcontroller Based Solar Tracking System. “INNOVATION-2008”, Regional Conference, PVP College, Pravaranagar, November 2008
4. Shubhangi Katti, Jayant Khedkar, Meghana Palkar. Smart and Simple Plant Watering System for Kitchen Garden. First International Conference on Advances in Computing, (ACM-ICAC 2008) Conference, Auradha College of Engineering, Chikhali, Buldhana, Jan 2008.
5. Shubhangi Katti, Meghana Palkar. M Learning: A better approach to Open Source Learning, ATCON 2009.DCPM, HVPM, Amravati. November 2009
6. Shubhangi Katti, Jayant Khedkar, Meghana Palkar, Automation of Watering System for Plants. ICI 2009 and NSI 34. Cummins College of Engineering for Women, Pune, January 2010.
7. Deepali Dhainje, Shubhangi Katti, Development of Protection Algorithm of Two layer Security for Storage and Communication of Secured Information. Proceedings of International Conference on Perspectives of Computer Confluence with Sciences, Nowrosji Wadia College, Pune, 2012
8. Nanda Kamble, Deepali Dhainje, Shubhangi Katti, Image Steganography Based E-Content Development For Teaching Proverbs and Idioms: Case Study Marathi Language. Proceedings of International Conference on Employability Enhancement Through Proficiency in Indian and Foreign Languages. Modern College, Shvaji Nagar, Pune. Jan 2013
9. Jayant Khedkar, Shubhangi Katti. National Workshop on Importance of Statistical Measures in Physics and Electronics. Proceedings of Recent Trends in Applied Statistics: An Interdisciplinary Approach. Fergusson College, Pune March 2013
10. Shubhangi Katti, Nandana Kamble, Deepali Dhainje, E-Story for Teaching Science Fiction in Marathi Language. National Conference on Emerging Trends in Computer Science and Computer Applications.NETCSA, Fergusson College, December 2013.

11. Deepali Dhainje, Shubhangi Katti, Nanda Kamble, Design and Development of Technical Word Dictionary For Teaching Marathi Language. International Conference on Employability Enhancement Through Proficiency in Indian and Foreign Languages. Modern College, Shvaji Nagar, Pune. Jan 2013
12. Shubhangi Katti, Nitin Kulkarni, Jayant Khedkar. Development of Color Vision System for Identification of Color Coded Resistors. Proceedings of National Conference on Advances in Electronics and Its Interdisciplinary Applications. NCEAEIA-2014. Fergusson College, Pune 2014
13. Shubhangi Katti, Deepali Dhainje, Nanda Kamble. Interpretrepreter System for Communication with Deaf-Dumb People. Proceedings of National Conference on Advances in Electronics and Its Interdisciplinary Applications. NCEAEIA-2014. Fergusson College, Pune 2014

Events Organized/Coordinated:

Sr. No	Name of the Event	Name of organizing Institute/ College/ University	Nature of contribution	Dates
1	Summer School for Programming Workshop	Fergusson College, Pune	Coordinator	May 2003
2	Project Exhibition during National Science Congress	MIT, Pune	Coordinator	January 2002
3	Microcontroller C and Embedded C Transdisciplinary Electronic Systems	Fergusson College, Pune	Coordinator	February 2022
		Fergusson College, Pune		July 2022

Additional skills/Activities

Course Content Developed (e-content)

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1. Developed E- content (epgPathshala) for Thirty Modules on Microprocessors and Microcontrollers.

Consultancy Services