



## Dr. SARIKA SHIVANAND PATIL

Assistant Professor, Department of E & TC

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### OVERVIEW:

**Qualifications:** Ph.D.(E&TC), ME (Electronics), BE (E&TC)  
**Experience:** Teaching -19 years Tech Assist – 1.5 years  
**Date of Joining STES:** 01/01/2004  
**Skills and Proficiencies:** Python, Machine Learning, Deep Learning, Computer Vision, Natural Language Processing, MATLAB, C

### SIGNIFICANT ACHIEVEMENTS:

- AVISHKAR 2015: Participated in Zonal Level Research Project Competition AVISHKAR 2015 held by BCUD, SPPU and selected for university level and state level workshop for AVISHKAR 2015.
- 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
- Best Paper Award in 2020 International Conference on Industry 4.0 Technology (I4Tech), VIT Pune, India, Feb 2020.
- Editorial Board Member for the international journal “Annals of Advanced Biomedical Sciences (AABSc)” ISSN 2641-9459, Medwin Publishers, United States

### AREA OF EXPERTISE /RESEARCH INTERESTS:

- Signal Processing

### NUMBER OF STUDENTS GUIDED:

- PG – 11 , UG – 20+ Groups

### RESEARCH PULICATIONS:

#### Publication Summary:

Scopus/ SCI-08

International Journal: 11

Conference : 02

h-index : 05

i10 index : 05

<https://scholar.google.com/citations?user=5ZGLjIAAAAAJ&hl=en>

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**FUNDED RESEARCH PROJECT:**

- Principal Investigator for Research Project on "Development of Security System Using Multimodal Biometrics" sanctioned by BCUD, SPPU, Pune, Amount Rs.250000, Year 2009-2012.

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**RESEARCH WORK:****Phd Research Work:**

- The main objective of the research work is analysis on retina disorder analysis using fundus images of the retina of human eye with image processing algorithms. In this work, a comprehensive study on retina disorder analysis in context of diabetics and hypertension using fundus images of the retina of human eye with image processing algorithms has been presented
- Through this work, the following objectives has been achieved:
  1. Automatic identification of retinal landmarks.
  2. Automatic identification of red and white lesions on retina in context with diabetic and hypertensive retinopathies.
  3. Automatic detection of retinal disorder called diabetic macula edema.
  4. An automatic synergistic tool for identification of retinal landmarks and non-vascular lesions relating to diabetic and hypertensive retinopathies.
- Research work may be very useful as an assistive aid to ophthalmologists and for ongoing clinical research. This investigation is carried out to help the utilization of large cohorts of fundus images generated with digital fundus cameras for automatic diagnosis of retina disorders in mass eye screening programs. The performance of the developed tool is validated in consultation with doctors (ophthalmologist and retina specialist). A tool that is not resource hungry and applicable for overall analysis of retinal images applicable to mass screening and further biological research is designed through this research work.
- The research was conducted under the guidance of ophthalmologists from **Shanti Saroj Netralay, Miraj, and Dr. Dudhbhate Netralay and Retina Centre, Pune**

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**NOTABLE GUIDED PROJECTS:****PG projects:**

- Indian currency recognition for visually impaired people (AY 2016-17 ) Sponsored by Sovimal software Pvt. Ltd, Pune.
- Normal and Abnormal Blood Vessels Detection on Retina (AY 2014-15) In consultation with Dr. Ajay Deshpande, (MD-Ophthalmologist).

**UG Projects:**

- Facial Identification Application with Cloud Database ( AY 2019-20 batch UG) Sponsored by Harit Path Private Limited, Nanded, Maharashtra.
- Motor Performance Detection using IoT, with Motor Management APP.(AY 2023-24 UG) Sponsored by Cummins India Ltd. , Pune.
- A Universal Gateway Device(AY 2023-24 UG) Sponsored by Tuka Bots, Pune.
- Mitigating Climate Change SDG-13 using Machine Learning Approach.(Ongoing AY 2024-25 UG ).

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**RESOURCE PERSON TO INDUSTRY/ACADEMIA:**

- Reviewer for the prominent journals namely Computers in Biology and Medicine, Biomedical Signal Processing and Control (Publisher - Elsevier Ltd.).

- Delivered an expert session on “Convolutional Neural Networks – Case Study” in MSBTE sponsored one-week FDP on “AI and Machine Learning”, at Sou. Venutai Chavan Polytechnic, Pune, on 4th to 8th March 2024.
- Delivered an expert session on “Convolutional Neural Networks ” in ISTE approved one-week online STTP on “Recent Advances in Deep Learning and its Multidisciplinary Approach” organized by Sinhgad College of Engineering, Pune, Maharashtra from 23rd to 28th January, 2023.
- Reviewer and Session Chair for National Conference on Pervasive Computing organized by Sinhgad College of Engineering, Pune during 5th April 2024.
- Delivered an expert session on “Introduction to Python” in AICTE sponsored one-week online STTP on “Machine Learning” Application in Civil Engineering organized by Dr. J. J. Magdum College of Engineering, Jaysingpur, Maharashtra from 21st to 25th February, 2022.
- Delivered an expert session on “Introduction to Computer Vision” in AICTE sponsored one-week online STTP on “Machine Learning” organized by Dr. J. J. Magdum College of Engineering, Jaysingpur, Maharashtra from 24th to 29th January, 2022
- Organizing Committee member for the 19th International Conference on “Emerging Materials and Nanotechnology” September 08-09, 2021 Berlin, Germany.
- Reviewer for national conference on Innovative Engineering Technologies and Management organized by MIT School of Engineering, MIT ADT University, Pune during 11-12th November 2021.
- Delivered a guest Lecture on “Image Processing with MATLAB” at SKN Sinhgad College of Engg, Pandharpur on 09/09/2021.
- Delivered an expert lecture on “Implementation of Image Processing Algorithms using MATLAB” in Two Week STTP approved by AICTE-ISTE, New Delhi on ‘Simulation Software Tools for Researchers with Impactful Writing Research Publications’ scheduled from 2nd - 13th August 2021 at SCOE, Pune
- Delivered a webinar on “Retinal Image Analysis, Concepts, Methods and Challenges” at the Army Institute of Technology on 15th July 2021 for the faculty.
- Invited Speaker for 2nd International Conference on Pathology and Surgical Pathology held during July 05-06, 2019 in Paris, France. (Mode of delivery-Video Presentation).
- Reviewer for the 9th International Conference on Electronics, Communications and Networks (CECNet2019) to be held in Kitakyushu City, Japan during October 18-21, 2019.
- Reviewer for the 4th International Conference on Fuzzy Systems and Data Mining (FSDM 2018), Bangkok, Thailand in November 2018.

#### **SUBJECTS TAUGHT:**

- Image Processing and Pattern Recognition
- Digital Electronics
- Information Theory & Coding Techniques
- Computer Organization
- Digital Communication
- Advanced Microprocessor
- Soft Skills
- Wireless Sensor Networks
- Electronic Devices and Circuits
- Data Analytics Lab
- Deep Learning

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

- ISTE sponsored one-week online STTP titled Recent Advances in Deep Learning and its multidisciplinary approach, Sinhgad College of Engineering, Pune, 23-28 January 2023.
- TEQIP funded “One-week Staff Development Program on Troubleshooting and Maintenance of Electronic Instruments”, December 03-07, 2012. Venue: SCOE, Pune
- AICTE Sponsored “Two-week Staff Development Program on Advanced Digital Signal Processing” at SCOE from 3-13 December 2007, Venue: SCOE, Pune
- Two days workshop for Engineering Teachers on “Latex for Paper Writing” at SCOE from 24-15 September 2010 Venue: SCOE, Pune.
- Dept. Co-Ordinator for three online FDP’s organized by DELLSOFT Pvt. Ltd. on Circuit Simulation, Power System Analysis & Design, Network Simulation on 12th and 13th Oct 2017. (Each of duration – one day)

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**CONFERENCES ATTENDED:**

- 2020 International Conference on Industry 4.0 Technology (I4Tech), at VIT Pune, India, Feb 2020.
- National Conference on Pervasive Computing 5-6 July 2024, at SCOE, Pune

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**FDP/STTP/SDP ATTENDED:**

- TEQIP/AICTE/ISTE/IETE sponsored FDP -11
- Spoken Tutorial IIT Bombay sponsored FDP -01
- Accenture sponsored workshop - 01
- Infosys sponsored workshop – 01
- Others -7

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**RESPONSIBILITIES HANDLED AT STES/SCOE/DEPT. :****Society Level**

- Worked as a Warden for Girls Hostel STES Vadgaon Campus from February 2005 to May 2009.
- Organizing committee member for International Telecommunication Union (ITU) International Conference (ITU) held at Narhe Campus
- Committee Member: Sinhgad Karandak, JAPAN Education Fair (2015)

**Institute Level (SCOE)**

- Working as a Website Co-Ordinator of the Institute since April 2022.
- Worked as a INSEM CAP coordinator for SEM I of AY2023-24.
- Worked as Institute Activity Co-Ordinator for Mission 2021 Admission Counseling Cell.
- Worked as Event Co-Ordinator for Mission 2021 Admission Counseling Cell.
- Organizing committee member for INNOVATION, Graduation Ceremony.

**Department Level (E&TC)**

- Lab In charge for Digital Electronics I & II Laboratory, Teacher Guardian, Class Teacher
- Organizing committee member for various Staff Development Programs & National, International Conferences
- Departmental Result Analysis Committee Coordinator
- Departmental Website Coordinator
- Project Guide for BE & ME students
- NBA Criterion 4 Co-Ordinator
- Departmental Techtonic Event Coordinator (Event Best from Waste /Jugaad)

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**DECLARATION:**

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

Date:    /    / 2024

Signature