

Ph.D. (E&TC) | M.Tech (Signal Processing, GATE Qualified)

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Location: Solapur, Maharashtra, India

### Professional Summary

Dedicated academician and researcher with over 11 years of teaching experience and 4 years of IT industry experience (Cognizant, Priori Solutions, Prisms Communications). Ph.D. holder in Electronics & Telecommunication, with M.Tech in Signal Processing (GATE qualified). Specialized in Digital Image Processing, Deep Learning, Embedded Systems, and Microcontrollers. Proven ability in student mentorship, academic research, and applied R&D projects in medical imaging and intelligent systems.

### Technical Skills

- Programming Languages: MATLAB, Python, C, C++, Embedded C, Assembly, VHDL
- Software & Tools: MATLAB Toolboxes (Image Processing, Neural Network), Simulink, NGSpice, MS Excel
- Databases: MySQL, DBMS
- Operating Systems: Windows (all versions), DOS
- Hardware & Embedded: DSP Processors, 8051 Microcontroller, 8085 Microprocessor
- Other Skills: Software Testing (Manual & Automation), Academic Mentorship, Technical Workshop Organization

### Research & Project Highlights

#### • **Ph.D. Research: Automatic Diabetic Retinopathy Detection & Classification using Machine Learning and Texture Features**

- Hybrid system using fuzzy optimization, image preprocessing, CNN & texture feature extraction, and deep learning classification
- Validated with ophthalmologist feedback and medical image datasets
- Tools: Python, CNN architectures, texture methods

- **M.Tech Project: Detection of RNFL in Retinal Fundus Images using Texture Methods**

- Low-cost alternative to OCT using texture analysis (GLCM, Gabor, Wavelet) and neural network classification

- Tools: MATLAB Image Processing Toolbox

- **M.Tech Seminar: Satellite Image Fusion and Segmentation using Wavelet Transform**

- Integrated MS and PAN satellite images for object extraction and segmentation

- **Other Projects**

- VANET-based Fuel Optimization using I2V/V2V communication

- BE Project: Satellite Image Fusion using Wavelet Transform – 1st Prize at REBEL competition

## **Academic Experience**

- **Assistant Professor** – VVPIET, Solapur (2014 – Present)

- Courses: DSP, Embedded Systems, Image Processing

- Mentored UG/PG student research projects

- Organized MATLAB workshops, paper presentations, tech fests

- **GATE Assistant** – VIT Pune (2011 – 2013)

- Assisted in teaching Signal Processing, Microprocessors

- Guided biomedical image analysis projects

## **Industry Experience**

- **Programmer Analyst** – Cognizant (2014)

- Enterprise-level software modules and quality testing

- Agile methodology exposure

- **Programmer Analyst** – Prisms Communications (2011 – 2014)

- Application development, debugging, and enhancements

- Programmer Analyst Trainee – Priori Solutions (2010 – 2011)
  - System design, development, and embedded system testing

### **Education**

- Ph.D. in Electronics & Telecommunication – Savitribai Phule Pune University, 2025
- M.Tech in Signal Processing – VIT Pune, Pune University, 2013 – 80.19% (Distinction)
- B.E. in E&TC – SVPM College, Pune University, 2010 – 63.13%
- XII – Amolackchand Mahavidyalaya, Yavatmal, 2006 – 70.17%
- X – Free Methodist English High School, Yavatmal, 2004 – 79.20%

### **Publications (Scopus Indexed)**

- Machine Learning Based Approach for Lesion Segmentation and Severity Level Classification of Diabetic Retinopathy – IIST, 2022 [Scopus]
- Comprehensive Modality Integration for Diabetic Retinopathy Image Analysis – Communications on Applied Nonlinear Analysis [Scopus]
- Deep Learning-Based Automated System for Identification and Gradation of Severity Levels in DR – INDIACom [Scopus]
- Deep Learning Based DR Medical Image Classification – CVIP 2021 [Scopus]

### **Achievements & Extracurriculars**

- Ph.D. research recognized for low-cost medical imaging innovations
- Winner – Intercollegiate Marathon (2008), Group Dance, and Badminton (2009)
- First Prize – REBEL Project Competition
- Chief Coordinator – TEESA, MATLAB workshops, and tech events

### **Personal Details**

- Date of Birth: 3rd November 1988
- Languages Known: English, Marathi, Hindi
- Address: 43, Dwarkesh, Bhagwat Nagar, Vijapur Road, Solapur
- Passport: G5461037 | Issue Date: 07/03/2017 | Valid Till: 06/03/2027 | Place: Pune