



## Dr. Prasantha H S

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### PROFESSOR

- Teaching
- Project Guidance
- Research Guidance
- Publications

- Extensive experience in executing Teaching/Training courses related to the Signal Processing and Machine Learning for Under-Graduate (UG) and Post-Graduate (PG) Programs
- Worked in Institutes from 2005 to 2023 in reputed Institutes such as PES IT (Autonomous Institute from 2007 to 2014 and Currently PES University) and NMIT(Autonomous Institute) which are among top 200 in NIRF Ranking from last 4 years
- Guiding Under-Graduate and Post- Graduate Projects related to Signal Processing and Machine learning,
- Guiding Research students for PhD in the area of Signal Processing and Machine Learning
- Publishing papers in the area of Signal Processing and Machine Learning, review of papers in the related domain, writing proposals for grants

### **RESEARCH INTEREST**

- **Signal processing:** Biomedical signal processing, Signal processing algorithms, Image Processing Algorithms
- **Multimedia Communication:** Audio Processing, Video processing, Image Processing
- **Remote Sensing:** Processing of remotely sensed data such as Compression, classification of data, etc.
- **Artificial Intelligence and Machine Learning:** ANN, Machine learning, Pattern recognition, AI

### **EDUCATIONAL QUALIFICATION**

**Completed Advanced certification in Data Science and AI from IIT Madras (June 2022 to Dec 2022)**

- The course covers the PYTHON, Data science, Data Analysis, AI Concepts, SQL, Machine Learning Concepts, Mathematical concepts related to Data science and AI and Data Visualization. The course enable us to learn from IIT Madras Faculty and Industry experts. The assessment of the course consists of Assignments, Quizzes and Project related to data science and AI.
- Successful completion of the course results in certificate from IIT Madras and IIT Madras Digital Skills Academy Alumni Status

**PhD:** Department of Information & Communication Engineering, Anna University Chennai, Chennai, 2013

Thesis Title: Digital signal processor implementation of some novel algorithms for video Processing on mobile Devices

**MTech:** Department of Electrical and Electronics Engineering, VTU Belgaum, 2001, FCD (84%)

Project: Remote energy monitoring and billing at Hewlett Packard India Pvt Ltd

**BE:** Electronics and Communication Engineering, Bangalore University, 1997, First Class

Project: Data acquisition systems at HAL Bangalore

### **CURRENT POSITION:**

Research Professor, Department of Computer Science & Engineering, K.S.Institute of Technology, Bangalore (From January 2023 till Date)

### **EXPERIENCE:**

SN	Institute	Designation	Service period
1	Nitte Meenakshi Institute of Technology	Professor, Dept. of ECE	Sept 2014 – Jan 2023
2	Atria Institute of Technology	Professor & Head, Dept. of ECE	Dec 2013-Aug 2014
3	PES Institute of Technology	Associate Professor, Dept. of ECE	Oct 2005- Dec 2013
4	East West Institute of Technology	Assistant Professor	July 2001- Oct 2005

### ***TEACHING/TRAINING:***

**Undergraduate program:** Handled courses such as Digital Electronics, Analog Electronics, Signals and Systems, Digital Signal Processing, Information theory and Coding, Digital Communication, Random Process, Data Compression, Algorithm for Image and Video Processing, Multimedia Communication, Probability and Random Process, Microcontroller and Embedded systems, Machine Learning, Artificial Neural Networks

**Postgraduate Program:** Advanced Digital Communication, error Control Coding, Image Processing and Computer Vision, Advanced DSP, Modern DSP, Probability and Random Process, Image and Video Processing, Applied Information Theory and Coding

### ***GUIDING PHD STUDENTS: Guided/Guiding 5 students for PhD program under VTU/Mysore University***

- Guided one student Mrs. Gunasheela for PhD Program under VTU in the area of Hyperspectral Image compression using compressive sensing techniques (PhD awarded under VTU-2022 April)
- Co-guided one student B M Manjula under Mysore University in the area of Biomedical Signal Processing (ECG) (PhD awarded-2020)
- Guiding one student Mr. Dheeraj D for PhD program under VTU in the area of Biomedical Image Processing (MRI Processing) (Thesis Submitted under VTU and waiting for final defense)
- Guiding one student Mrs. Kushalatha M R for PhD program in the area of Hyperspectral Image classification for crop conditioning (completed Open seminar and writing thesis for submission)
- Guiding one student Mrs. Beena for PhD program in the area of Hyperspectral image processing for agriculture applications (Appearing for CV)

### ***GUIDING PROJECTS FOR UG AND PG:***

Guided more than 100 UG projects and more than 15 PG projects

- Guided and Guiding Projects related to **state of art technologies in the area of Image Processing** such as Scaling, Compression, Enhancement, Restoration, detection, Segmentation, etc.
- Guided and guiding projects related to **state of art technologies in the area of Video Processing** such as video scaling, Video coding standards, Video segmentation, Video Summarization, Video scaling, etc.
- Guided and Guiding Projects in the area of **Communication** (Modulation, Channel coding, Source coding)
- Guided and Guiding Projects in the area of **Signal Processing** (FFT, Filter design, etc.)
- Guided and Guiding Projects related to **Computer vision and Machine learning applications**, processing of remotely sensed data (Hyperspectral & Multispectral Image Processing), Biomedical signal processing, etc.

### ***RESEARCH ACTIVITIES:***

- **RESEARCH PUBLICATIONS:** Publications in reputed conference & Journals (Published more than **80** Papers with citations of more than 400 with h index of 9 in Google scholar & Citations of around 530 in research gate). Publication includes **IEEE, Taylor and Francis, Springer, Elsevier, Scopus Indexed, Q2 Q3 Q4 Indexed**
- **PROJECT PROPOSALS FOR FUNDING:** Submitted Project proposals for Grants to agencies such as DST, ISRO related to
  - Hyperspectral Image Compression (ISRO Respond)
  - Hyperspectral Image compression using compressive sensing techniques (IRO Research areas in Space)
  - Hyperspectral Image classification for crop conditioning (DST)
  - Development of an AI enabled Robot to carryout phased array ultrasonic Inspection on curved/straight ship Hull structure

### ***INTERACTION WITH OUTSIDE WORLD:***

- **Reviewer** of conference papers including IEEE, Journal papers including IEEE Transaction and others reputed,
- **Session chair** for various conferences
- **Organizing Committee Member** for various Conferences
- **Technical Program Committee Member** for various conferences
- **Editorial Board Member** for Journals
- **Doctoral Committee Member** for research students under VTU and other universities, etc.
- **Member** - Staff selection Committee
- **Member** – BOS, Academic Council, Research Committee, BOE

## Key accomplishments at K.S Institute of Technology Bangalore – 2023 January to till Date

- **Teaching:** Handling Course Microcontroller and Embedded System, R programming Lab, Handled Analog and Digital Electronics and Research Methodology (PG)
- **Publications:**
  - Published **one** Paper in HTL Journal (Scopus Indexed), BLOCKCHAIN TECHNOLOGY APPLICATION FOR EFFECTIVE ORGAN DONATION
  - Communicated **papers** to Q2, Q3 indexed Journal
    1. Determination of Disease Index for Hyperspectral Imaging, to Multimedia Tools and Applications.
    2. Analysis of Hyperspectral data using Vegetation indices, International Journal of reconfigurable and Embedded systems (IJRES)
- **Patents:** Filed **one** patent with the title “An Innovative Technique of Mineral Survey and Evaluation using Hyperspectral Remote Sensing” and waiting for Patent publication
- **Project Guidance:** Guided one project on Block chain Technology application (BLOCKCHAIN TECHNOLOGY APPLICATION FOR EFFECTIVE ORGAN DONATION)
- **Reviewer:**
  - I-manager’s Journal on Image Processing
  - IEEE International Conference on Integrated Circuits and Communication Systems (ICICACS-2023)
  - International Conference on Distributed Computing and Electrical Circuits and Electronics ICDCECE-2023
  - International Conference on Applied Intelligence and Sustainable Computing (ICAISC-2023)
  - IEEE International Conference on Data Science and Network Security (ICDSNS)
  - Lattice Science Publication: Indian Journal of Signal Processing (IJSP)
  - International Conference on Applied Intelligence and Sustainable Computing (ICAISC-2023)
  - IEEE International Conference on Networks, Multimedia and Information Technology (NMITCON) is being organized at Nitte Meenakshi Institute of Technology, Bengaluru, INDIA during 1<sup>st</sup> and 2<sup>nd</sup>, September 2023 in association with IEEE Bangalore Section
  - IJRTE Journal
  - IEEE Mysore Sub Section is organizing the IEEE INDISCON-2023 at GSSS Institute of Engineering & Technology for Women, during 5th August -7th August 2023
  - RV Institute of Technology and Management (RVITM), Bangalore is organizing the International Conference on Evolutionary Algorithms and Soft Computing Techniques on (EASCT-2023) during 20-21, October 2023
- **Editor: IIP Proceedings:** Book series titled “Futuristic Trends in Artificial Intelligence”
- **I-manager Journal Editor:** We are pleased to inform you that i-manager's Journals are available in the Web of Science Reviewer Recognition Platform (formerly Publons)
- **Technical Committee member:** The “International Conference on Recent Advances in Engineering and Computer Applications- 2023 (ICRAECA2023)” organized and hosted by the LJ University in Ahmedabad on July 14th and 15th, 2023 in association with IFERP.
- **Invited Talk:** Invited as speaker (Resource Person for the MATRIX event on the domain AI&ML – Atria IEEE STUDENT BRANCH – April 19th 2023)
- **Mentor – Student Internship:**
  - An Object Recognition System for Visually Impaired with Voice Guidance using Computer Vision, Aditi M, Chetana P, PranaviRasamsetty, PraneethCh, PES University Bangalore
  - Visualizing and Forecasting Stocks using DashBy : Sai BhavyaSripada(99038832), SumanaGullapalli(99038823) NMIT Bangalore
  - **Code Bridge** - Design and Develop a model to identify Cyber bullies on Social Media Handles using AI/ML ModelsBasaveshwar Engineering College Bagalkote, ChinmayeePatilchinmayeepatil893@gmail.com, Arun Kulkarni, arun200417@gmail.com, Ramya Vaidya, ramyavaiya41@gami.com
  - **Imagery of Markup AI-** assisted detection and explanation of Medical Condition from Medical ImagesKLS GogteBelagavi, Anish ShirishKatti, KarthikUdayJadhav Ravi Kiran
- **FDP/Workshop Attended:** Attended more than 20 events on the related area and domain
- **Technical Committee member:** The “International Conference on Recent Advances in Engineering and Computer Applications- 2023 (ICRAECA2023)” organized and hosted by the LJ University in Ahmedabad on July 14th and 15th, 2023 in association with IFERP.
- **Coordinator:** Coordinated and conducted FDP on R programming and its applications.

- **Speaker (FDP):** Handled 3 sessions in FDP on R programming and its applications
- **Judge (Project Exhibition):** Invited to Judge projects executed by ECE students of SJBIT (33 Batches) – May 3rd 2023)
- **HACKATHON:** Mentored 8 batches for HACKATHON at KSIT on 4th and 5th May 2023
- **Department/Institute level activities:** Research Coordinator- CSE Department, Expert Member for review of UG Projects
- **OP Setting:** PhD course work Exam Ramaiah Institute of Technology, Bangalore
- **National advisory committee member:** ICRAECA 23 International Conference on Recent Advances in Engineering and Computer Applications-2023

**Key accomplishments at Nitte Meenakshi Institute of Technology Bangalore - 2014 to till Jan 2023 (Autonomous Institute under VTU Belgaum)**

- **Teaching:**
  - **Undergraduate program:** Handled courses such as Digital Electronics, Analog Electronics, Signals and Systems, Digital Signal Processing, Information theory and Coding, Digital Communication, Random Process, Data Compression, Algorithm for Image and Video Processing, Multimedia Communication, Probability and Random Process, Machine Learning, Artificial Neural Networks
  - **Postgraduate Program:** Advanced Digital Communication, error Control Coding, Image Processing and Computer Vision, Advanced DSP, Modern DSP, Probability and Random Process, Image and Video Processing, Applied Information Theory and Coding
- **Publications:** Published more than **65** Papers in an International conferences and International Journals of repute
- **Handled** open elective courses related to multidisciplinary domains
- **Patents:** Filed **one Indian patent** with title An AR-based computer Aided App to detect Glioma in human brain using color coding scheme (PhD work of my student) and patent got published
- **Project Guidance:** Guided more than 30 UG projects and 2 PG projects
- **Member** (Editorial Board): I-manager and other Journals
- **Member** (Technical Program Committee): For various conferences of repute and Organizing Committee for various conferences and Journals, some of them are
  1. 2nd International Conference On Networking, Information and Communication (ICNIC 2015) held at SVCE, Bangalore during May 2015
  2. Outreach Committee – International conference on Signal Processing, Communication and Computational Research (ICSPCCR-16) held at Vidya Vikas Institute of Engineering & Technology Mysore held during May 2016
  3. Outreach Committee – International Conference on Applied Science Engineering and Technology (ICASSET-16), Anekal, Bengaluru 6<sup>th</sup> - 7<sup>th</sup> June 2016)
- **FDP/Workshop Attended:** Attended more than 50 events
- **Member:** Board of Studies for NMIT and other Institutes such as CMR University
- **Academic Council Member:** PES College of Engineering Mandya, CMR University
- **Member:** Board of Examiner
  - NMIT
  - Ramaiah Institute of Technology (MSRIT)
  - Reva University)
- **Research Committee member:**
  - VTU
  - Mysore University
  - Reva University
- **Research Council Member and Member coordinator:** Served at NMIT from 2015-2021 which includes framing guidelines for research activity of the Institute and monitoring the research progress of various departments, coordinating the meeting with Research Council Chairman **Prof. N R Shetty**, Mentor NMIT and active Chairman **Prof. L M Patnaik**, Professor IISC, **Dr. Sridhar V**, Dean NMIT
- **Expert Member for the Center of Excellence:** Satellite Design Center from 2015 to 2017 and 2021 to 2023 for guiding students to carryout projects in the design of student satellites
- **Expert Member for the Center of Excellence:** Robotics Center from 2020 to 2021 for guiding students to carryout projects in the related area and initiated IEEE Chapter on Robotics and Automation Society
- **Member:** NIRF committee for the duration 2019-2021 headed by **Prof. N R Shetty**, Mentor NMIT

- **Member:** Research Quality output committee headed by **Prof. N R Shetty and Prof. L M Patnaik**
- **Member:** Academic Audit committee for the duration 2021-2022 (IQAC, NMIT)
- **PhD examiner**
  - (1. PhD Examiner - Comprehensive viva Examiner for the candidate Mr. Raghavendra registered under VTU (Research Center: NAL, Bangalore)
  2. PhD Examiner – Comprehensive Viva Examiner for the Candidate Mrs. Suma registered under VTU (Research Center: AIT, Chikmagalur)
- **Member** – Doctoral Committee member
  - (1. Member – Doctoral Committee for the student Pursuing PhD under VTU (Research center: Nagarjuna College of Engineering) during 2018-19
  2. Member – Doctoral Committee for the student Pursuing PhD under VTU (Research center: Nagarjuna College of Engineering) during 2019-20)
- **Session Chair:** for Various Conferences including IEEE Sponsored Conferences, Springer Sponsored, etc.
  - (1. 2nd International Conference on Recent Trends in Signal Processing, Image Processing and VLSI (ICrTSIV - 2015) held at DBIT, Bangalore during June 2015
  2. International Conference on Communication and Computing (ICC-2015) held at Alpha college of Engineering, Bangalore during July 2015
  3. National conference on convergence of science, technology and management held at Dayananda sagar college of Engineering and management during May 5, 2016)
- **Reviewer:** for various conferences including IEEE, Springer sponsored conferences, Springer Sponsored, etc.
  - (1. Reviewed papers for International Conference On Networking, Information and Communication (ICNIC 2015) Held during May 2015
  2. Reviewed papers for the Fourth International Conference on "Emerging Research in Computing, Information, Communication and Applications" (ERCICA-16) held at NMIT Bangalore during July 2016 and July 2018 •
  3. Reviewed papers for INTERNATIONAL CONFERENCE ON NETWORKING, EMBEDDED AND WIRELESS SYSTEMS (ICNEWS -2018), held on 27th- 28th December 2018 at BMSCE, Bangalore
- **Reviewer:** for Journals including IEEE Transaction on Remote sensing and other quality Journals
  - (1. ETRI Journal (WILEY) during 2018 and 2019
  2. IEEE Transaction of remote sensing and Geoscience during 2020
  3. I-manager Journal during 2020, etc...)
- **Judge for Project open house:**
  1. NMIT from 2014 to 2022
  2. Ramaiah Institute of Technology for the year 2016-17, 2017-18, 2018-19
  3. E&CE Department, Dayananda sagar college of Engineering and management, Bangalore during May 2016
- **Keynote speaker:** for various conferences including IEEE Sponsored, etc.
- **Guest Lecture:**
  - (1. Guest Lecture – Presented a technical talk at KSIT Bangalore on Fundamentals of signal processing during April 2016
  2. key note address on Current trends in Signal Processing in E&CE Department at Sea college of Engineering ‘Tech Fest SEAONICS-2017’ on 08th April 2017.)
- **Jury Member and Guiding Students:** BITES - XCELERATOR STUDENT PROJECT AWARDS 2020
- **Member:** Staff Selection Committee NMIT, CMR University and SEA college of Engineering
- **Proposals:** Submitted proposals to ISRO, DST for funding in the related domain
- **Others:**
  - (1. Reviewer text book – Reviewed text book Chapters of Multiresolution and Multirate Signal Processing: Introduction, Principles and Applications” published by McGRAW-HILL Education (India) private limited
  2. Panel Member – Research Committee (VTU) for reviewing the synopsis of PhD students for registration to PhD program under VTU, Belgaum during 2017 December/2018 January
  3. Member – REVA University PHD Panel during Dec 2016
  4. Visited ISRO-RRSC to discuss about ISRO RESPOND Project program, UG Students projects and collaborative research activities during July 2019

5. Appointed as mentor and evaluator for BITES (Board for IT Education and Standards) and Xcelerator for evaluation in Phase 1 and Phase 2
6. Invited to organize a Special Issue in one of the Journals in WSEAS Transaction which may lead to upgraded to Associate Editor of the particular Journal for one year)

### **Key accomplishments at PES Institute of Technology Bangalore (Currently PES University) 2005 - 2014**

- **Teaching:**
  - **Undergraduate program:** Handled courses such as Digital Signal Processing, Information theory and Coding, Digital Communication, Random Process, Multimedia Communication, Probability and Random Process
  - **Postgraduate Program:** Advanced Digital Communication, error Control Coding, Image Processing and Computer Vision, Antenna theory and design
- **Publications:** Published more than **12** Papers in an International conferences and International Journals of repute
- **Project Guidance:** Guided more than 75 UG projects and 15 PG projects
- **FDP/Workshop Attended:** Attended more than 50 events
- External project examiner for both UG and PG programs for the institutes such as PESIT, RVCE, MSRIT, UVCE, KVG College of Engineering, RNS Institute of Technology, MVJ College of Engineering, EWIT, etc.
- **Member :** Board of Studies for PESIT
- **Member :** Board of Examiner for PESIT, UVCE
- Worked as **Expert Member** for the Center of Excellence – CORI Center under **Prof. V K Agrawal and Prof. Sambashivarao** from 2011 to 2014 for guiding students to carryout projects in the center
- **Industry Interaction:** Conducted 2 day Training Program on spread spectrum techniques for SASKEN Communications through Preva Test solutions.
- **Member:** Academic Audit committee for the duration 2011-2013
- **Session Chair** for Various Conferences including IEEE Sponsored Conferences, etc.
- **Reviewer** for various conferences including IEEE, Springer sponsored conferences
- **Member:** Staff Selection Committee PESIT

### **AWARDS AND RECOGNITION**

- ***Best Researcher Award*** in the International Scientist Awards on Engineering, Science and Medicine held on 11 & 12-Feb-2021 at Pondicherry, India
- ***EXECOM Member*** IEEE Signal Processing Society Bangalore Chapter
- ***Research award*** from NMIT Bangalore for quality Publications during 2020-21 and 2021-22

### **Professional Membership**

Senior Member – IEEE	Member - Institute of Engineering and Technology (MIET)
Senior Member – Signal Processing Society	Member - International Association of Engineers (MIAENG)
Senior Member – Computer Society	Life Member - Indian society of systems for science and engineering (ISSE)
Life Member - Indian Society of Technical Education (ISTE)	Member -IFERP
Fellow – IETE	

### **Technical Experience and skill details**

- MATLAB
- PYTHON Programming
- R Programming
- DSP Processor (TMS320C6711, DM642)
- Mathematical fundamentals
- Domain Knowledge: Signal Processing, Machine learning, ANN, Image and Video Processing, Remote Sensing

### **Personal Details:**

Date of Birth:	3 <sup>rd</sup> April 1976	Mother Tongue:	Kannada
Marital Status:	Married	Nationality:	Indian
Children:	2		