Dr. Harshalatha Y

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Education

	Degree	Year	Institute	Specialization
1	PhD	2022	Indian Institute of Technology Kharagpur	3D Video Coding
2	MTech	2009	Visvwsvaraya Technological University	Digital Electronics
3	BE	1998	Malnad College of Engineering	Electronics and Communication

Professional Experience

	Date (from-to)	Designation	Organization
1	Jan 2011 – Till date	Assistant Professor (Re-designated)	Siddaganga Institute of Technology, Tumakuru
2	Mar 2010 – Dec 2010	Senior Lecturer	Siddaganga Institute of Technology, Tumakuru
3	Mar 2004 – Mar 2010	Lecturer	Siddaganga Institute of Technology, Tumakuru
4	Sept 1999 – Feb. 2004	Lecturer	Bahubali College of Engineering, Shravanabelagola

(Please fill in reverse order. Current designation should be at the top)

Positions held
- Department Criteria 3 Coordinator
- Project Coordinator

Affiliations of Professional organizations
- Member, IEEE

Awards and Honors

- Received QIP scholarship from AICTE to pursue PhD from IIT Kharagpur
- Industry Internship at KPIT Technologies for two months (11th July to 10th September 2022)
- Guided UG project "Wagon - The Smart Wheel Chair" that received KSCST sponsorship
- Guided UG project "e-Authentication System" that received second place in IEEE I2CONNECT-21 Project Exhibition held at Sahyadri College of Engineering and Management on June 26th, 2021 in association with IEEE

Courses Taught

Undergraduate Courses
- Foundations of Electronics Engg.
- DSP Architecture
- Embedded System Design
- Basic Electronics
- Solid State Devices and Technology
- Fundamentals of HDL programming
- VHDL
- Microcontroller and Applications
- Digital System Design with VHDL
- Machine Learning
- Microcontroller
- Digital System Design using Verilog
- Digital Image Processing
- Advanced Digital Image Processing
- Advanced Multimedia
- Medical Image Processing
- IoT Network Technology
- Image Processing and Computer Vision
- Computer Vision
- Computer Organization and Architecture
- ARM Microcontroller

Postgraduate Courses
- Pattern Recognition
- Image Processing

Research Guidance

Sl. no	Name of the Scholar	Title	Year of completion

Research Areas

- Image Processing and Computer Vision
- Video Coding
- Machine Learning and Deep Learning
- Autonomous driving

Sponsored Projects

Publications

Journals

- **Y, Harshalatha,** Biswas, P.K., "SSIM-based Joint-Bit Allocation for 3D Video Coding", International Journal of Multimedia Tools and Applications, vol. 77, issue 15, pp. 19,051-19069, Aug. 2018. DOI: https://doi.org/10.1007/s11042-017-5327-0

- **Harshalatha, Y**., Biswas, P.K. "Structural similarity-based rate control algorithm for 3D video" International Journal of Multimedia Tools and Applications, Vol. 80, issue 17, pp. 25897–25908, July 2021. https://doi.org/10.1007/s11042-021-10922-z

Conference Proceedings

- **Harshalatha, Y**., Biswas, P.K., "Rate distortion optimization using SSIM for 3D video coding", Proceedings of 23rd IEEE International Conference on Pattern Recognition (ICPR-2016), pp. 1261-1266, Dec. 4th-8th, Cancun, Mexico, 2016. DOI: https://doi.org/10.1109/ICPR.2016.7899810

- **Harshalatha, Y**., Biswas, P.K., "SSIM-Based Joint Bit-Allocation Using Frame Model Parameters for 3D Video Coding", Proceedings of National Conference on Computer Vision, Pattern Recognition, Image Processing, and Graphics (NCVPRIPG-2017), pp. 45-53, CCIS vol. 841, Mandi, India, 2017. DOI: https://doi.org/10.1007/978-981-13-0020-2_5

- **Harshalatha, Y**., Biswas, P.K., "Joint bit allocation for 3D video with nonlinear depth distortion - An SSIM-based approach", Proceedings of International Conference on Computer Vision and Image Processing (CVIP-2018),

Sept.29th-Oct.1st, Jabalapur, India, 2018. DOI: https://doi.org/10.1007/978-981-32-9291-8_12

- Amruth Y, Gopinath B. M, Gowtham M. P, Kiran M and **Y. Harshalatha**, "Fingerprint and Signature Authentication System using CNN," Proceedings of IEEE International Conference for Innovation in Technology (INOCON-2020), pp. 1-4, Bengaluru, India, 2020
  DOI: https://doi.org/10.1109/INOCON50539.2020.9298235

- Md Zakir Hussain K, Komal Nagaraj Kattigenahally, Nikhitha, Pabitra Priyadarshini, and **Y Harshalatha**, "Traffic Symbol Detection and Recognition System," Proceedings of Sixth International Conference on Emerging Research in Computing, Information, Communication and Application (ERCICA-2020), pp. 885 - 897, Springer LNEE Vol. 790, Bengaluru, India, 2020 DOI: https://doi.org/10.1007/978-981-16-1342-5_70

- Pabitra Priyadarshini Jena, Komal Nagaraj Kattigenahally, Nikhitha S, Surabhi Sarda, **Harshalatha Y** "Multimodal Biometric Authentication: Deep Learning Approach," Proceedings of International Conference on Circuits, Controls and Communications (CCUBE), pp. 1-5, Bengaluru, India, 2021. DOI: https://doi.org/10.1109/CCUBE53681.2021.9702724

- **Y. Harshalatha** and K. C. Rupesh, "Performance Comparison of 3D Video Encoders with Depth Map Filtering," Proceedings of IEEE 5th International Conference on Contemporary Computing and Informatics (IC3I-2022), pp. 1042–1045, Noida, India, 2022,DOI: https://doi.org./10.1109/ic3i56241.2022.10072575

- **Y. Harshalatha**, Nagesh M. V, Navya G. Hebbar, R. Manasa, and N. Kenchanagoudra, "Lidar-based Advanced Driver Assistance for Vehicles," Proceedings of International Conference on Smart Systems for applications in Electrical Sciences (ICSSES), pp. 1–5, Tumakuru, India, 2023
  DOI: https://doi.org/10.1109/ICSSES58299.2023.10201154

- **Harshalatha Y** and A. G. Karegowda, "Perceptual Quality-based Adaptive Rate Distortion Optimization for 3D Video," Proceedings of IEEE International Conference for Women in Innovation, Technology and Entrepreneurship *(ICWITE)*, pp. 375–378, Bengaluru, India, 2024
  DOI: https://doi.org/10.1109/ICWITE59797.2024.10502765

- K. C. Rupesh and **Y. Harshalatha**, "Sensor Perception Reliability in Automated Vehicles," Proceedings of 4th International Conference on VLSI, Signal Processing, Power Electronics, IoT, Communication Embedded Systems (VSPICE-2023), vol. 1227, pp. 31–40, Nitte, India, 2024. DOI: https://doi.org/10.1007/978-981-97-4657-6_3

- **Y. Harshalatha**, M. Varun, S. Thrinesh, S. P. Shilpashree, and S. D. Biradar, "Student Attention Monitoring: An Automated Approach," Proceedings of International Conference on Smart Systems for applications in Electrical Sciences (ICSSES), pp. 1–5, Tumakuru, India, 2024.
DOI: https://doi.org/10.1109/ICSSES62373.2024.10561307

- Asha Gowda Karegowda, D Vaishnavi, **Y Harshalatha**, "Coconut Disease Detection using Traditional ML Classifiers with GLCM and SIFT Features," Proceedings of 8th International Conference on Computational System and Information Technology for Sustainable Solutions (CSITSS), pp. 1-6, Bengaluru, India, 2024. DOI: https://doi.org/10.1109/CSITSS64042.2024.10816784

- **Y Harshalatha**, A Akshay, B Sathvik, G Gnaneshwara Reddy, TV Maruthi, "Fruit Quality Detection: An Automated Approach," Proceedings of International Conference on Innovation and Novelty in Engineering and Technology (INNOVA), pp. 1-5, Vijayapura, India, 2024.
DOI: https://doi.org/10.1109/INNOVA63080.2024.10846976

- **Y Harshalatha**, Ansh Singhal, Aribenchi Suraj, Jaya Chandak, Aryan Kumar, "Computer Vision-Based Speed Hump and Pothole Detection System for Vehicles," Proceedings of 3rd International Conference on Smart Systems for applications in Electrical Sciences (ICSSES), pp. 1-5, Tumakuru, India, 2025.
DOI: https://doi.org/10.1109/ICSSES64899.2025.11009443

Book Chapters
- Md Zakir Hussain K, Komal Nagaraj Kattigenahally, Nikhitha, Pabitra Priyadarshini, and Y Harshalatha, "Traffic Symbol Detection and Recognition System," Proceedings of Sixth International Conference on Emerging Research in Computing, Information, Communication and Application (ERCICA-2020), pp. 885 - 897, Springer LNEE Vol. 790, Bengaluru, India, 2020 DOI: https://doi.org/10.1007/978-981-16-1342-5_70

- K. C. Rupesh and Y. Harshalatha, "Sensor Perception Reliability in Automated Vehicles," Proceedings of 4th International Conference on VLSI, Signal

Processing, Power Electronics, IoT, Communication Embedded Systems (VSPICE-2023), vol. 1227, pp. 31–40, Nitte, India, 2024. DOI: https://doi.org/10.1007/978-981-97-4657-6_3

Reviewer of Journals
- Multimedia Systems, Springer
- Circuits, Systems, and Signal Processing, Springer

Editor/ Reviewer of Journal

Patents

Invited Lectures, talks and workshops
- Resource Person for invited talk: "How to Present a Technical Paper" organized by IEEE student Branch, SIT, Tumakuru
- Resource Person for invited talk: "Video Compression: 3D Approach," presented at Dr. AIT, Bengaluru, 25th March 2021 Technical session for the AICTE Quality improvement Scheme (AQIS) Sponsored 6 Days Online Short Term Training
- Resource Person for invited talk: "Use cases of IIoT" at Siddaganga Polytechnic on 22nd Dec. 2022
- Resource Person for Invited Talk : "Documentation Software Workshop: For Scientific Paper and Report Writing," presented at SSIT Tumkur on 5th May 2023
- Resource Person for two weeks internship program on "Python for Beginners" at SIT, Tumkur from 17/10/2022 to 5/11/2022