Dr. K. Viswanath

Professor and HEad, Dept of ETE, SIT
Contact:9481346724
Email:vishwanath@sit.ac.in
Vidwan ID: 91221
Scopus ID: 49663698000
OrcID: 0000-0001-8563-5379
Faculty ID:

Education

	Degree	Year	Institute	Specialization
1	Ph D	2009	Indian Institute of Technology Kharagpur	E&ECE, Image Processing
2	M E	2000	BMSCE Bangalore	Digital Communication Engg.
3	B E	1996	BMSCE Bangalore	Telecommunication Engg.

Professional Experience

	Date (from-to)	Designation	Organization
1	Mar 2010-Till date	Professor	SIT TUMKUR
2	Mar 2007-Mar 2010	Assistant Professor	SIT TUMKUR
3	Nov 2000-Mar 2007	Lecturer	SIT TUMKUR
4	Jan 2000-Oct 2000	Lecturer	KIT TIPTUR

Positions held
- Head of the Department (2010-13, 2016-19, 2022-till date)
- IEEE SIT Branch Counsellor
- ICSSES (2025, 2024, 2023) Organizing Committee Member
- ICCVSP 2013, Organizing Committee Member
- Technisium (Every Year) Organizing Committee Member
- Chairman, BoS, BoE Department of ETE SIT Tumkur
- KSCST Coordinator (2018-2022)

Affiliations of Professional organizations
- IEEE Senior Member 2020
- Fellow, Association of Computer and Electronics Engineers 2018
- Member, IAENG 2008

Awards and Honors

- Co-Chair, IEEE R10 Bangalore Section Student Summit 2023
- Programme Committee Member, National Conference on Digital Technologies for Road Safety, 17-18, May 2023, WTISD-2023
- IEEE Best Student Branch Counsellor 2020
- Biography listed in Who's Who in the World, 2011, NJ, USA
- Advisory Member, International Conference on Communication, computation, management & nanotechnology (ICN-2010), 29– 30 Oct. 2010, BKIT Bhalki

Courses Taught

Undergraduate Courses
1. Telecommunication Switching Networks
2. Mobile Communication
3. Optical Communication
4. Neural Networks
5. Satellite Communication
6. Image Processing
7. Digital Signal Processing
8. Fuzzy Logic Systems
9. Multimedia Communication
10. Signals and Systems
11. Wireless Communication
12. Basic Electronics

Postgraduate Courses
1. Satellite Communication
2. Image Processing
3. Multimedia Communication
4. Advanced Wireless Communication
5. Image and Video Processing

Research Guidance

Sl. no	Name of the Scholar	Title	Year of completion
1	Santhosh B	Development of Algorithms for Secured Medical Image Analysis	2021
2	Harish L	Satellite Image Processing	Writing Thesis
3	Suchithra NP	Development of Image Processing algorithms	Course Work Completed
4	Rajesh KM	Biometric Authentication	Course Work Completed

Research Areas

- Image Filtering and Transcoding
- Satellite Image Processing
- Multimedia Communication

Sponsored Projects

Completed Projects:

1. Title: Analysis of Speech Signal Transmission using non-spread spectrum based radios
   Funding Agency: CAIR, DRDO
   Amount: 9.9L
   Duration: 2021-22
   Role: Co-PI
2. Title: Design and Development of multilingual speaker recognition system
   Funding Agency: VTU
   Amount: 5.82L
   Duration: 2011-2013
   Role: Co-PI
3. Indian Digital Heritage
   Funding Agency: DST
   Amount: 23L (Jayanta Mukherjee, CSE IIT Kharagpur)
   Duration 2010-13
   Role: Collaborator to IIT Kharagpur

Publications

Journals

- K.Viswanath**,** J. Mukherjee, P. K. Biswas, and R. N. Pal, "Wavelet to DCT transcoding in transform domain," Springer Journal on Signal, Image and Video Processing, Vol. 4, No. 2, pp. 129-144, 2010.
- K. Viswanath**,** J. Mukherjee and P. K. Biswas, "Wavelet transcoding in the block discrete cosine transform space," IET Image Processing, Vol. 4, No. 3, pp. 143-157, 2010.
- K. Viswanath, J. Mukherjee, and P. K. Biswas, "Image filtering using symmetric convolution in the block DCT domain," ELSEVIER Journal of Visual Communication and Image Representation, Vol. 22, No. 2, pp. 141-152, Feb 2011.
- K. Viswanath**,** J. Mukherjee and P. K. Biswas, "Block DCT to Wavelet Transcoding In Transform Domain," SPRINGER Journal on Signal, Image and Video Processing, Vol. 6, No. 2, pp. 179-195, Jun 2012, Available Online, DOI 10.1007/s11760-011-0259-z.
- Singh, A.K., Mukhopadhyay, J., Rao, K.S., K. Viswanath, "Classification of Infant Cries Using Dynamics of Epoch Features," Journal of Intelligent Systems, Vol 22,

Issue 3, pp. 351-364, 2013, ISSN (Online) 2191-026X, ISSN (Print) 0334-1860, DOI: 10.1515/jisys-2013-0050, Jul 2013.

- Shruti Patil and K. Viswanath, 'Image Fusion with Edge Preserving Smoothing Filter,' International Journal of Emerging Trends in Engineering Research (JETER), Vol. 3, No. 6, pp. 216-222, 2015.

- Santhosh B and Viswanath K, "Review on Secured Medical Image Processing,' Springer Information Systems Design and Intelligent Applications, Vol. 435, pp. 531-537, Feb 2016. Online ISBN 978-81-322-2757-1.

- Ranjitha R and K. Viswanath, "Design and development of vibration analyzer using TM4C1233H6PM MCV using 3-axis MEMS Accelerometer ADxL325", International Research Journal of Engineering and Technology, (IRJET), -Vol. 5, Issue 2, pp. 1429-1432, 2018.

- B Santhosh, Viswanath Kapinaiah, "Medical Image Authentication Using Quartic Digital Signature Algorithm" Vol. 7, Issue 4, pp. 38-41, Aug 2018.

- Mallanna S D, Viswanath K and Pramod K. B. Rangaiah "Wideband Branchline Hybrid Coupler for Ultra High Frequency applications," Journal of Emerging Technologies and Innovative Research (JETIR), Vol. 6, Issue 3, pp. 215-218, March 2019, ISSN-2349-5162

- Mallanna S D, Viswanath K, Pramod K. B. Rangaiah, and Pradeep Kumar B.P "High Gain Perfect Matched Inset Fed Rectangular Microstrip Patch Antenna for 2.4 GHz Frequency," Journal of Advanced Research in Dynamical and Control Systems, Issue 13, pp. 46-52, 2018

- B Santhosh and Viswanath Kapinaiah, "Compression of Medical Images Based on Devils Curve Coordinate System", Springer Smart Intelligent Computing and Applications, pp. 649-657, 2019.

- B Santhosh and Viswanath Kapinaiah, "Medical Image Authentication Using Quartic Digital Signature Algorithm," International Journal of Intelligent Information Systems 7 (4), 38, 2019

- B Santhosh and Viswanath Kapinaiah, "Design and Implementation of Compressed Medical Data over an Authenticated Secured Channel," International Journal of Engineering and Advanced Technology (IJEAT), Vol. 9, Issue 3, pp. 1543-1548, 2020, ISSN: 2249 –8958.

- CE Ranjitha, K Viswanath, TN Rishith Sadashiv, "Road Extraction from Satellite Images Based on K-mean Clustering", International Journal of Electrical, Electronics and Data Communication (eISSN:2320-2084, pISSN:2321-2950), pp. 10-14, Vol.9, Issue 9, 2021. [Available Online]; http://www.iraj.in/journal/journal_file/journal_pdf/1-770-163913524610-14.pdf

- Santhosh, B; Viswanath, K, "Network Optimization on Internet of Medical Things", Network Optimization in Intelligent Internet of Things Applications: Principles and Challenges, 1, 14, 2024, CRC Press, First Edn.

- Santhosh, B; Viswanath, K, "Integration of Machine Learning and Deep Learning in Medical and Healthcare Education", Applications of Parallel Data Processing for Biomedical Imaging pp. 148-1742024 IGI Global.

- Mallikarjun, BC; K, Viswanath;B.M Karthik.;Murthy A.P.;Sinha S. Retinal image analysis for detection of diabetic retinopathy- a simplified approach, Multimedia Tools and Applications, Volume 84, Year 2025, Pages 4435-4456, DOI:10.1007/s11042-024-18821-9

Conference Proceedings

- K. Viswanath**,** J. Mukherjee, S. Mukhopadhyay and R. N. Pal,"Transcoding: JPEG2000 to JPEG," International Conference on Advanced Computing and Communication (ICACC-2007), Feb 9-10, 2007, Madurai-India, pp. 355-358.
- K. Viswanath, J. Mukhopadhyay and P. K. Biswas,"A DCT domain approach for transcoding JPEG2000 to JPEG," International Conference on Cognition and Recognition (ICCR 2008) Apr 10 -12, 2008, Mandya-Mysore, India, pp. 215-220.
- K. Viswanath, J. Mukhopadhyay and P. K. Biswas,"Transcoding in the block DCT space," IEEE International Conference on Image Processing (ICIP 2009), 7-11 Nov 2009, Cairo-Egypt, pp. 3685-3688.
- K. Viswanath**,** J. Mukherjee P.K. Biswas Wavelet Image Resizing In the Block DCT Domain, National Conference on Computer Vision, Pattern Recognition, Image Processing and Graphics, pp. 167 – 170, Dec 15-17, 2011, Hubli.
- Gurunath Reddy, Viswanath K, "Image Inpainting for Heritage Preservation," National Conference on Adv. In Computer Applications, May10-11, 2012, Tumkur.
- Kapinaiah, V.; Mukhopadhyay, J.; Biswas, P.K., "Image deblocking by transcoding DCT blocks to wavelet subbands," *8th International Symposium on Image and Signal Processing and Analysis (ISPA),* pp. 251-256, Sep 4-6, 2013. doi: 10.1109/ISPA.2013.6703748
- Rathod Rangu Vithal and Viswanath K**.,** "Text Embedding Based on Non-subsampled Contour let Transform Using Steganographic Method," International multi-track conference on sciences, engineering and technical innovations, (Jalandhar, Punjab, India), Jun 3-4, 2014.
- Rudresha H R and Viswanath K, "Analysis and Comparison of Scleral usage in Person Identification", National Conference on Advanced Researches in Electronics and Communication Engineering-NCAREC-2014, (Bangalore), Apr 22-23, 2014. ISBN: 978-93-83520-80-0
- Abhilash B and Viswanath K, "Segmentation of inhomogeneity intensity Heritage-images using level set method", National Conference on Advanced Researches in Electronics and Communication Engineering-NCAREC-2014, (Bangalore), Apr 22-23, 2014. ISBN: 978-93-83520-80-0
- Sharath C S and Viswanath K, "Image Fusion in Wavelet Transform Domain" National Conference on Advanced Researches in Electronics and Communication Engineering-NCAREC-2014, (Bangalore), Apr 22-23, 2014. ISBN: 978-93-83520-80-0
- Arjun Dev K and Viswanath K, Hybrid Restoration Technique for Degraded Astronomical Images" IAESTD International Conference on Current Innovations in Engineering and Technology (ICCIET), pp. 143-147, Bangalore, 26 July 2015.
- H. Venkatesh and K. Viswanath, "Fusion of satellite images in transform domain," *IEEE International Conference on Communication and Signal Processing (ICCSP)*, Melmaruvathur, 6-8 Apr 2016, pp. 1884-1888. doi: 10.1109/ICCSP.2016.7754497
- H. Venkatesh and K. Viswanath, "Satellite Image Fusion in Transform Domain", International Conference on Innovations in Information, Embedded and Communication Systems (ICIIECS), pp. 765-710, Mar17-18, 2016
- Santhosh B and K Viswanath, "Novel Public Key Cryptosystem for Medical Image" IEEE International Conference on Inventive Systems and Control (ICISC), pp. 1-4, Jan 2017.

- Deepika Rani GM and Viswanath K, *"Extraction of River from Satellite Images,"* IEEE International Conference on Recent Trends in Electronics Information Communication Technology, pp. 223-227, India, May 19-20, 2017.
- Sweta and Viswanath K, *"A Review of Enhancement Techniques on Medical Images,"* 29th International Conference on Cloud Computing Computer Science and Advances in Information Technology-ICCCCIT 2017, ISBN: 978-93-85225-8, pp. 6-10, Bangalore India, Apr 9, 2017.
- Viswanath K and Sweta, *"Enhancement of Brain Tumor Images,"* IEEE International Conference on Recent Trends in Electronics Information Communication Technology, pp. 1859-1863, India, May 19-20, 2017.
- B. Santhosh and K. Viswanath, "A novel public key cryptosystem for medical images," *2017 International Conference on Inventive Systems and Control (ICISC)*, Coimbatore, pp. 1-4. Jan 19-20, 2017, doi: 10.1109/ICISC.2017.8068683.
- Chethana G and K Viswanath, "Sclera identification and segmentation using active contours without edges", National Conference on Recent Trends in Engineering Science(NCRTES) -2018, pp. 30-33, SIT Tumkur, 3 Mar 2018.
- Chethana G and K Viswanath, "Extraction of Sclera Blood Vessels Using Active Contour Without Edges," International Conference on Signal Processing, Communications, Embedded & VLSI Technologies-2018, pp. 119-123, Apr 12, 2018.
- Chethana G and K Viswanath, "Performance Analysis of blood vessel segmentation in sclera images," IEEE International conference on RTEICT 2018, pp. 1036-1040, 18-05-2018.
- Ranjitha R and K Viswanath, "Design and development of vibration analyzer using TM4C1233H6PM MCV using 3-axis MEMS Accelerometer ADxL325, National Conference on Recent Trends in Engineering Science -18, 44-48, SIT Tumkur, Mar 3, 2018.
- Meghana K S and Viswanath K, "Leaf Disease Detection Using Image Processing and Machine Learning Approach," 4th IEEE International Conference on Recent Trends On Electronics, Information & Communication Technology (978-1-7281-0630-4/19/$31.00 ©2019 IEEE), pp. 915-919, May 17, 2019.
- Deepthi, SN; Viswanath, Kapinaiah, "Extraction of Bridges from Satellite Images using the Superimposition of K-means clustering and Watershed algorithm", International Conference on Smart Modernistic in Electronics and Communication (ICSMEC – 2020), Secunderabad, Inia, 2020, ISBN No. 978-93-80831-43-5
- Mallikarjun, BC; Viswanath, Kapinaiah, "Mobile Agent Based Protocol for Location Management in Mobile Ad Hoc Networks", IEEE Sixth International Conference on Wireless Communications, Signal Processing and Networking (WiSPNET), pp. 406-410, 2021, doi: 10.1109/WiSPNET51692.2021.9419424.
- Mallanna S.D., Viswanath K. and P. K. B. Rangaiah, "Design and Analysis of High Gain Planar Inverted-F Antenna (PIFA) for Wimax and Nomadic Applications," 2021 Sixth International Conference on Wireless Communications, Signal Processing and Networking (WiSPNET), 2021, pp. 6-10, doi: 10.1109/WiSPNET51692.2021.9419399.
- Ranjitha, CE, Viswanath K, Rishith Sadashiv TN, "Road Extraction From Satellite Images Based On K-Mean Clustering," International Conference on Big data, Machine Learning and IOT (Kolkata), IRS-ICBMI-KLKT-240821-109, 2021.
- Ranjitha, CE, Viswanath K, Rishith Sadashiv TN,"Extraction of Buildings from Images Based on Segmentation", International Conference on Technology Management and Societal Applications (ICTMSA- 2021), 2021.

- Ranjitha, C. E., Viswanath Kapinaiah, and Rishith Sadashiv, T. N; Extraction of Buildings from Images Based on Segmentation Proceedings of the International Conference on Cognitive and Intelligent Computing. 1, pp. 431-440, 2022 Springer, Singapore.
- Viswanath, Kapinaiah; Gowri, Sri, S; Brain Tumor Segmentation Using Image Clustering Techniques 2023 IEEE 5th International Conference on Cybernetics, Cognition and Machine Learning Applications (ICCCMLA), pp. 198-203 2023 IEEE, doi: 10.1109/ICCCMLA58983.2023.10346709
- Viswanath, K; Navya, V; Abhilash, G; Tanmay, M; Tejas, V; Performance Analysis of Underwater Images Enhancement techniques 2023 International Conference on Smart Systems for applications in Electrical Sciences (ICSSES), 6-Jan 2023. https://ieeexplore.ieee.org/document/10201045
- Viswanath, K; Abhilash, G; Tanmay, M; Tejas, V; Enhancement Techniques for Underwater Images, 14th International Conference on Advances in Computing, Control, and Telecommunication Technologies, ACT 2023;http://www.scopus.com/inward/record.url?eid=2-s2.0-85174394329&partnerID=MN8TOARS 9 (1), pp. 1595-1602, 2023, ISSN 2395-5295
- Deepika, K J; Viswanath, K; Fusion Techniques for Biomedical Image Reconstruction IEEE International Conference on Smart Systems for applications in Electrical Sciences (ICSSES), Tumakuru, India, 2024, pp. 1-5, doi: 10.1109/ICSSES62373.2024.10, 5-Jan 2024. https://ieeexplore.ieee.org/document/10561315
- Harish, L; Viswanath, K; A Literature Survey on Image Fusion Methods for Remote Sensing Applications IEEE 4th International Conference on Communication, Computing and Industry 6.0 (C216);https://ieeexplore.ieee.org/document/10431319 2024, DOI: 10.1109/C2I659362.2023.10431319
- Viswanath K.;Bhoomika G.;Pooja T.N.;Tejeshwini S, Image Restoration and Enhancement Using Transform Based Techniques, International Conference on Smart Systems for Applications in Electrical Sciences (ICSSES-2025), 2025, pp. 1-5, doi: 10.1109/ICSSES64899.2025.11009663.

Book Chapters

- B. Santhosh ., K. Viswanath ; Network optimization on internet of medical things, Network Optimization in Intelligent Internet of Things Applications: Principles and Challenges, Year 2024, Pages 139-152, DOI:10.1201/9781003405535-11
- Santhosh B.;Viswanath K. Integration of machine learning and deep learning in medical and healthcare education, Applications of Parallel Data Processing for Biomedical Imaging, Volume Chapter 8, Year 2024, Pages 148-174, DOI:10.4018/979-8-3693-2426-4.ch008
- Santhosh B.;Viswanath K. Applications of GANs in image generation and style transfer, Exploring Generative Adversarial Networks and Meta Learning Synergies, Year 2025, Pages 135-167, DOI:10.4018/979-8-3693-7575-4.ch005

Editor/ Reviewer of Journal

- IET Image Processing
- Elsevier *Journal of Visual Communication and Image Representation*
- Elsevier Biomedical Signal Processing and Control

Invited Lectures, talks and workshops

- Transforms & their applications in signal and Image processing, 12th Jan 2018, PDACE Gulbarga.
- Heritage and Inscription Document Processing, 28 May -1 June 2012, M.S. Ramaiah Institute of Technology, Bangalore.
- VTU -VGST Sponsored FDP on "Video and Image Processing Design Using LABVIEW / DSP" on 17th March 2012, Oxford College of Engineering, Bangalore.