Center of Excellence

1. VLSI Design Laboratory:(E&C)

VLSI design laboratory established in 2010-12 funded by VGST, Govt of Karnataka. The facility is used to conduct regular training programs for UG, PG students, research scholars and faculty members from our institution and other academic institutions who want to improve their knowledge and practical skill in VLSI design and embedded system. These facilities are also used by the students of other colleges on request as a part of consultation.

2. Medical and image processing

The facilities/services available are High end work stations with high resolutions monitors (desktop computers), MATLAB software-version 15.B, Teaching Aid Interactive Panel, Network Accessories Router Cisco 1905. Work being carried in the areas; Diabetic Retinopathy, Retinopathy of Prematurity, MRI image segmentation algorithms and Medical Image Denoising. The activities such as, to study the various medical image modalities like XRAy, CT- Scan, MRI, memograms etc., and to compare their relative merits and demerits as well as applications.

Sl.No.	Faculty Name	Title of the projects	Amounts
1.	**Dr. Radhakrishna Rao, Dept. of ECE**	VLSI Design Laboratory	**23,00,000.00**
2.	**Dr. H.S Sheshadri Professor, Dept .of ECE**	Medical Image Processing Laboratory	**20,00,000.00**

List of Projects done under Medical Image Analysis Laboratory.

Sl No.	Project Title	Course	Year
1	An Algorithm for segmentation of retinal blood vessels	UG	2017
2	Retinal blood vessel segmentation using Matched Filter.	UG	2017
3	Video based face recognition	UG	2017
4	Detection of optic disk in retinal image	UG	2017
5	Extraction of blood vessels from retinal image and its classification.	UG	2018
6	Detection of optic disk in retinal image.	UG	2018
7	Simulation and implementation of FPGA based image processing algorithm.	PG	2018
8	Retinal blood vessel width analysis using image processing	UG	2019
9	Calculation of Retinal Blood Vessels tortuosity	UG	2019
10	Optical Character Recognition Based test marks entry System	UG	2019
11	Smart Analog Circuit Simulator	PG	2019
12	Smart Digital Circuit Simulator	PG	2019

List of publications on Medical Image Processing.

1.	Dr. H S Sheshadri, S B Manoj Kumar "A Survey on Evaluation Datebase for Diabetic Retinopathy" National Conference on Emerging Trends in Electronics and Communication (NCETEC15), BGSIT, Nagamangala, Mandya, 5th May 2015.
2.	R Manjunatha and Dr.H.S.Sheshadri "*Retinal Image Vessel Width Analysis In Retinopathy Of Prematurity*" Asian Journal of Computer Science and Technology (AJCST), ISSN: 2249-0701 Vol.8 No.2, pp. 59-63, 2019.

3.	R Manjunatha and Dr.H.S.Sheshadri "*Boundary Extraction and Vessel width Calculation in Retinal Fundus Images*" Asian Journal of Engineering and Applied Technology (AJEAT), ISSN 2249-068X Vol.8 No.2, pp. 63-70, 2019.
4.	R Manjunatha, Mahesh Koti and Dr.H.S.Sheshadri "*Boundary Extraction and Tortuosity Calculation in Retinal Fundus Images*" Springer, ISBN 978-981-13-5801-2, ICERECT-2018,PESCE, Mandya, pp 1119-1130, 2018.
5.	R Manjunatha, Manojkumar S.B and Dr. H.S.Sheshadri "*Optic Disc Detection using Red Channel Component in Fundus Images by Morphological Operations*" International Journal of Engineering Technology, Management and Applied Sciences (IJETMAS), Volume 5, Issue 6, ISSN 2349-4476,June 2017
6.	Manojkumar S.B, R Manjunatha and Dr. H.S.Sheshadri "*An Identification of diabetic retinopathy using kirsch edge detection and watershed transformation algorithm*" International Journal of Engineering, Basic sciences, Management & Social studies (IJEBMS), Volume 1, Issue 1, 978-93-84698-33-1, May 2017.
7.	ManojKumar.S.B, Manjunath.R and Dr.H.S.Sheshadri 2015, "*Feature extraction from the funds images for the diagnosis of diabetic retinopathy*", IEEE, ICERECT-2015,PESCE,Mandya, PP. 240-245, 2015.
8.	Manoj kumar S B et.al. *"Diabetic Retinopathy Classification Using Transfer Learning And Exudates Detection Using Faster–RCNN "* Journal of Emerging Technologies and Innovative Research (JETIR) (UGC Approved) , 2019 JETIR May 2019, Volume 6, Issue 5 www.jetir.org (ISSN-2349-5162) pp 29-34.
9.	Manoj kumar S B et.al. *"Detection of Diabetic Retinopathy by Screening of Fundus Images"* International Journal for Research in Applied Science & Engineering Technology (IJRASET) (UGC recognized), May 2019, Volume 7 Issue V, May 2019- Available at www.ijraset.com, ISSN: 2321-9653; SJ Impact Factor: 7.177, PP 3667-3674
10.	Manoj kumar S B et.al. "*Detection of Retinal Disease Screening Using Local Binary Patterns*" April 2019, ISBN:978-981-13-5802-9 © Springer Nature Singapore Pte Ltd. , pp 1055-1067, 2019 .
11.	Manoj kumar S B et.al. "*Retinal Disease Detection Using LBP Technique*" International Journal of Scientific Research and Review (UGC Approved), July 2018, Volume 7, Issue 7, ISSN 2279-543X. pp 142-150.

12.	Manoj kumar S B et.al. "*Classification And Detection Of Diabetic retinopathy Using K-Means Algorithm*" IEEE, International Conference on Electrical, Electronics, and Optimization Techniques ICEEOT 2016, (Scopus Indexed), **IEEE Explore, ISBN: 978-1-4673-9939-5/16/$31.00©2016 IEEE, pp 326-331.**
13.	36. Akshath M J and H.S.Sheshadri, "*Denoising of skull stripped brain tumor MR images*" International Journal of Computer Sciences and Engineering, Vol.-6, Issue-11, Nov 2018 , E-ISSN: 2347-2693.
14.	Akshath M J and H.S.Sheshadri, "*Hybrid Edge Detection Techniques for MR Image Analysis",* International Research Journal of Advanced Engineering and Science, Volume 2, Issue 1, pp. 79-83, 2017.
15.	Akshath M J and H.S.Sheshadri, "*Integration of segmentation techniques to detect cyst in human brain using MRI sequences* " IEEE International Conference on Emerging Research In Electronics, Computer Science and Technology ICERECT -2015 (Scopus Indexed), IEEE Explore 978-1-4673-9563-2/15, 2015 .
16.	S R Bhagyashree, H S Sheshadri "An Approach in the Diagnosis of Alzheimer Disease-- A Survey" **International Journal of Engineering Trends and Technology (IJETT), Volume-7 Number-1 , Year of Publication : 2014** .
17.	S R Bhagyashree, H S Sheshadri "A Review on the Method of Diagnosing Alzheimer's Disease using Data Mining" International Journal of Engineering Research & Technology (IJERT).
18.	Arunkumar, H.S. Sheshadri, "New Computer Aided Diagnosis (CAD) technique for digital mammograms", Accepted for publication in International Journal Of Image Processing (IJIP). April 2013.
19.	Mr.Arunkumar, Dr. H.S. Sheshadri, 2013"Building Accurate Classifier for the Classification of Microcalcification", is accepted for publication in 5th International Conference on Digital Image Processing (ICDIP 2013), Beijing, China, International Journal.
20.	Arunkumar, H.S. Sheshadri, S Narasimha Murthy "Methods towards the Classification of Clustered Microcalcification", (Special Issue of International Journal of Computer Applications) pp.35-39, June 2012

21.	7. Arunkumar, H.S. Sheshadri, "On the Classification of Imbalanced Datasets", International Journal of Computer Applications (IJCA), DOI: 10.5120/6280-8449, Volume 44– No.8, April 2012
22.	Anant R Koppar, V Sridhar, 2012 "Tele-Health Medical Diagnostics System with Integrated Electronic Health Records", Indian Journal of Public Health Research and Development (IJPHRD, Volume 3, No 1, 49 – 52, ISSN: 0976-0245 / 0976-5506.
23.	Arunkumar, H.S. Sheshadri, Accurate Classifier for the Classification of Microcalcification, International Journal of Computer Science and Information Technologies, Vol. 3 (6), pp.5346-5350, October 2012
24.	Mr.Arunkumar, H.S. Sheshadri, "Breast contour extraction and pectoral muscle segmentation in Digital Mammograms" , International Journal of Computer Science and Information Security,Vol. 9, No. 2, February 2011, PP.53-59
25.	H S Sheshadri, ManojKumar S B "Classification and Detection of Diabetic Retinopathy using K-means Algorithm" the International Conference on Electrical, Electronics and Optimization Techniques (ICEEOT 2016) DMJ College of Engineering, Chennai, Tamil Nadu, During 3rd to 5th March 2016
26.	Dr. H S Sheshadri Akshath M.J, 2015 "Integration of segmentation techniques to detect cyst in human bgain using MRI sequences" International Conference on Emerging research in Electronics, Computer Science and technology ICEREСT 2015, PESCE Mandya.
27.	S R Bhagyashree, H S Sheshadri, Dr Murali Krishna, 2015 "A comparative study of Naïve Bayesian and Jrip classification techniques used in the diagnosis of Alzheimer`s disease" ICNIC 2015,Bangalore, India.
28.	S R Bhagyashree, H S Sheshadri, Dr Murali Krishna "Diagnosis of Alzheimer's disease employing neuro psychological and classification techniques" ICITCS IEEE 2015 Kaula lampur Aug 24-27th 2015
29.	S R Bhagyashree, H S Sheshadri, 2014 "Design of Embedded system for tracking an locating the patient suffering from Alzheimer's disease" International Conference on Computational Intelligence and Computational research(ICCIC)

30.	S R Bhagyashree, H S Sheshadri , 2014"An initial investigation in the diagnosis of Alzheimer`s disease using various classification techniques" International Conference on Computational Intelligence and Computational research(ICCIC).
31.	S R Bhagyashree, H S Sheshadri "An approach to preprocess data in the diagnosis of Alzheimer`s disease" ICCCIOT 2014 Dec 13 & 14 Changchun, China (IEEE),2014.
32.	S.Narasimha Murthy And Dr.H.S.Sheshadri " Methods towards the Classification of Clustered Micro calcifications" International conference of Computer Applications (0975-8887) on ACCTHPCA, June 2012.
33.	Anant R Koppar, V Sridhar, "An Algorithm for Automated Detection of Tuberculosis Bacilli Using Color Image Microscopy" at the Med-e-Tel International Conference held from 6-8 April 2011 at Luxembourg, Global Telemedicine and eHealth Updates: Knowledge Resources, Volume 4, 2011, 351-354.
34.	Anant R Koppar, V Sridhar, "A Workflow Solution for Electronic Health Records to Improve Healthcare Delivery Efficiency in Rural India" in eTELEMED 2009, an International Conference on eHealth, Telemedicine and Social Medicine, held on February 1-7, 2009 – Cancun, Mexico. Received Best Paper Award. IEEE Digital Library, 10.1109/eTELEMED.2009.30, 227-232.
35.	Anant R Koppar, V Sridhar, "Kshema – A Unified Healthcare Management Solution For Improving Efficiency of the Healthcare Delivery System in Rural India" in ICM 2009, the 21st International Conference on Microelectronics held from 19-22 Dec 2009 at Marrakech, Morocco. IEEE Digital Library 10.1109/ICM.2009.5418671.