

BIODATA



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1. Educational Qualification:

Degree	Branch/Specialization	Institute/University	Year of passing
B.E	ECE	Thiagarajar College of Engineering, Madurai-15	1984
M.E	Communication System	Thiagarajar College of Engineering, Madurai-15	1997
Ph.D	Medial Image Processing	Madurai Kamaraj University, Madurai -15.	2009

2. Professional/Industry Experience : (inchronological order)

Sl. No.	Designation	Institute/Organization	Period	
			From	To
1	Associate Lecturer	A.N.J.A.W polytechnic, Sivakasi	23.01.1985	31.12.1992
2	Senior Lecturer	Raja college of Engg, Madurai-20	18.08.1997	24.11.2001
3	Lecturer	Thiagarajar College of Engineering, Madurai-15	01.11.2001	01.11.2006
4	Senior Lecturer	Thiagarajar College of Engineering, Madurai-15	01.11.2006	03.11.2009
5	Assistant Professor	Thiagarajar College of Engineering, Madurai	01.11.2009	01.04.2013
6	Associate Professor	Thiagarajar College of Engineering, Madurai	01.04.2013	31.01.2020

3. Research Interest: Medical Image Processing

4. Journal Publications (add patent if any):

Patent:

1. Patent-Published-First Examination Report Dental Cyst Detector
Dr.A.Banumathi,Dr,(mrs).S.Raju,Dr.V.Abhai kumar US IN2759CH2009
2. Patent-Dental Cyst Detector-Dr.A.Banumathi,Dr,(mrs).S.Raju,Dr.V.Abhai kumar US 9014440 B2,WO 2011058452 A1
3. Invention Award - Automated diagnosis of periodontal diseases in dental radiographs by bifurcation techniques
4. Patent- Dental Caries Detector- Dr.A.banumathi, dr.(mrs).s.raju, Dr.V.Abhai kumar- WO/2011/058453.
5. Published a Patent entitled "System and Technique for Detecting Inferior Alveolar Nerve Canal in Dental Images" on 16th July 2020 with the Application number.202041030459.

Journals:

1. A.Banumathi, P.Uma Maheswari, G.Ulaganathan, K.A.Shahul Hameed,"Inferior Alveolar Nerve Canal Segmentation by Local Features based Neural Network Model", IET-Image Processing Journal, Vol 16, pp. 703–716, 2022. <https://doi.org/10.1049/ipr2.12375>.
2. A.Banumathi, P.Uma Maheswari, G.Ulaganathan,R.Yoganandha, "Automatic localization of inferior alveolar nerve canal in panoramic dental images", Signal, Image and Video Processing, Springer, pp.1-9, 2022, doi: 10.1007 /s11760-021-02091-1.
3. A.Banumathi, P.Uma Maheswari, K.Priya, "Detection of Inferior Alveolar Nerve Canal by Feature based Machine Learning Approach", NCAIEV21 Journal of Physics: Conference Series 1917 (2021) 012025 IOP Publishing doi:10.1088/1742-6596/1917/1/012025.
4. A Banumathi,G Jaffino, Ulaganathan Gurunathan, J Prabin Jose," Comparison of missing tooth and dental work detection using dental radiographs in human identification",International Journal of Biomedical Engineering and Technology,Volume32, Issue 3, pages 217-228,2020
5. Dr. A.Banumathi,G.Jaffino,"Detection of Missing Tooth from Dental Radiographic and Photographic Images in Forensic Odontology" International Journal of BioMedical Engineering and Technology, Inderscience Publishers (IEL), Vol.30 Issue. 1,pp 75-93,(2019)
6. M Sivabalasundari, A Banumathi, G Ulaganathan, TS Venkatarajan, "Identifying LCF-DLT approach and educating engineering students to learn foreground perception in video surveillance", The International Journal of Electrical Engineering & Education, Pages 0020720919834668, SAGE Publications, 2019
7. A. Banumathi , G. Ulaganathan, K.A. Shahul Hameed,"A simple method of immunostained tissue scoring based on maximal separation techniques",Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization, vol 6, Issue 4, pages 473 - 479, Taylor & Francis, 2018
8. A Banumathi,G Ulaganathan, K Thanvir Mohamed Niazi, Soundarya Srinivasan, VR Balaji, D Manikandan, KA Shahul Hameed, "A clinicopathological study of various oral cancer diagnostic techniques",Journal of pharmacy & bioallied sciences,Wolters Kluwer--Medknow Publications,Volume 9, Suppl 1,Pages S4,2017
9. Dr. A.Banumathi,G.Jaffino,"Contourlet Transform based Efficient Shape Extraction Technique for Forensic Odontology" Biomedical Research, Vol.28 No. 2(2017) pp 608-615
10. Dr. A.Banumathi,G.Jaffino,"A New Mathematical Modelling based Shape Extraction Technique for Forensic Odontology" Journal of Forensic And Legal Medicine, Elsevier, Vol.47 No. 1(2017) pp 39-45
11. A. Banumathi , G. Ulaganathan, K.A. Shahul Hameed,"P53immunostained cell nuclei segmentation in tissue images of oral squamous cell carcinoma", Signal , Image and Video Processing,Springer London, Vol.11 No. 2 (2017) pp 363-370.
12. A Banumathi, KA Hameed, G Ulaganathan, "Cell Nuclei Classification and

- Immunohistochemical Scoring of Oral Cancer Tissue Images: Machine-learning Approach",Asian Journal of Research in Social Sciences and Humanities,Asian Research Consortium,Volume 6, Issue 10,Pages 732-747,2016.
13. A Banumathi, R Karthika Devi, "An efficient fast marching algorithm for dental cyst segmentation in digital radiographs",Advances in Natural and Applied Sciences,American-Eurasian Network for Scientific Information, Volume 10, Issue 10 SE, Pages 120-128, 2016
 14. Dr. A.Banumathi,G.Jaffino,"A Region Based Active Contour Shape Extraction Technique for Dental Images in Human Forensic Identification" Australian Journal of Basic and Applied Sciences, Vol.16 No. 9(2015) pp 345-350
 15. A.Banumathi,B.Vijayakumari,M.Anees Fathima"Human Identification System with Dental Photographs using Contourlet Transform"International Journal of Applied Engineering Research,Vol.10 No.1(2015)Pp 288-294ISSN 0973-4562IF :0.135
 16. A.Banumathi, " Design and Analysis of an Automated Dental Identification system with Radiographs and photographs",Journal of Signal Image and Video processing, 2014.
 17. A.Banumathi A variant approach for human forensic identification using dental radiographs with skeleton and contour, International Journal of Signal and Imaging Systems Engineering, Vol. 8, Nos 1/2,2014
 18. A.Banumathi Victim Identification with dental images using texture and morphological operations,Journals of Electronic Imaging,Vol 23(1)pp.13004-1-13004-13 Jan 2014 ISSN online 1017-9909 ISSN print 1560-229X IF: 1.061
 19. A.Banumathi Dental Radiographs and Photographs in Human Forensic Identification , International journal of IET-Biometrics,Vol-2, Issu-2,June 2013, pp 56-63
 20. A.Banumathi Diagnosis of Dental deformities in Cephalometry images Using Support Vector Machine,International journal of J Med Syst,Springer Science Business Media, LLC 2009,11th August 2009 ,DOI 10.1007/s10916-009-9347-9
 21. A.Banumathi Missing tooth Identification and teeth numbering in Dental Xray and Photographic imaging,Journal of Biomedical Engineering and technology,Vol 13, Issue 2,pp. 185-200, ISSN online 1752-6426 ISSN print 1752-6418,2013.
 22. A.Banumathi,"An effective dental shape extraction algorithm using contour information and matching by mahalanobis distance",International Journal of Computer Science and TechnologyVol.2,Issue.4 Oct Dec 2011
 23. A.Banumathi, "An Effective Shape Extraction Algorithm for Dental Radiograph using Contour Information",International Journal of Computer Science and Technology,Volume 2, Issue 4, 2011.
 24. S.Raju,V.Abhaikumar,A.BanumathiAutomated Diagnosis And Severity Measurement Of Cysts In Dental X-RAY Images Using RBF Neural Networks, "Biosensors: Data Acquisition, Processing and Control",Vol.14,Issue.2.pp.105-110(2009) June 2009
 25. A. Banumathi, A. Kannammal, R. Arthee, S. Raju, V. Abhaikumar, "Automated Diagnosis and Severity Measurement of Cysts in Dental X-ray Images Using Neural Network",International Journal of Biomedical Soft Computing and Human Sciences: the official journal of the Biomedical Fuzzy Systems Association,Volume 11, Issue 1, pp.15-19, 2006.
 26. A.Banumathi, S.Raju, V.Abhaikumar, Performance Analysis of various Progressive image transmission coding techniques on medical images, Caledonian Journal of Engineering, Volume 1,No.5-Jan-June-2005
 27. A.Banumathi Performance Analysis of Various Techniques Applied in HumanIdentification Using Dental X-Rays , International journal of J Med Syst,Springer Science Business Media, LLC 2007,Volume 31,No.3/210-218/june2007
 28. R Karthika Devi, A Banumathi, G Ulaganathan, "An automated and hybrid method for cyst segmentation in dental X-ray images", Cluster Computing, Pages 1 -13, Springer US, 2019
 29. A. Banumathi , G. Ulaganathan, K.A. Shahul Hameed , "Performance evaluation of maximal separation techniques in immunohistochemical scoringof tissue images", Journal of

micron, Elsevier, Vol 79, pp.29-35, 2015.

30. A. Banumathi Change Detection of Cysts From Dental X-ray images using principal component Analysis International Journal of Biomedical Engineering and Consumer Health Informatics Volume I /29-33/Jan-June 2008
31. A. Banumathi, G. Jaffino, "A Region Based Active Contour Shape Extraction Technique for Dental Images in Human Forensic Identification", Australian Journal of Basic and Applied Sciences, Vol 9, No.16, pp. 345-350, 2015
32. A. Banumathi An Effective Dental Shape Extraction Algorithm Using Contour Information and Matching by Mahalanobis Distance Journal of Digital Imaging, Springer Publications, Vol 26, Issue-2, 2013, pp-259-268

5. Book/Book chapter publications:

6. Funded Projects

Sl. No.	Title of the project	Funding Agency	Duration	Amount	Status
1.	Victims Identification in Forensic Odontology using Dental Images	UGC	March 2013- March 2017	8,21,800	Completed

7. Ph.D Guidance

Sl. No.	Scholar Name	University	Topic	Status
1.	Mrs. B. Vijayakumari	Anna University	Human Identification in Forensic Dentistry using Dental X-ray Images	Completed
2.	Mrs. S. Karthika Devi	Anna University	Automated Diagnosis of Dental Caries	Completed
3.	Mr. K. A. Sahul Hameed	Anna University	Automated Diagnosis of Oral cancer	Completed
4.	Mrs. M. Murugeswari	Anna University	Elimination of Magnification Error in Dental Panoramic X-ray images	Ongoing
5.	Mrs. M. Sivabala Sundari	Anna University	Automatic Video Surveillance system for tracking multiple objects	Ongoing



6.	Mrs.G.Jaffino	Anna University	Identification of Victims using various X-ray Imaging Modalities and Photographic Dental Images	Completed
7.	Mrs. P.Uma Maheswari	Anna University	Delineation of Inferioir Alveolar Nerve Canal in panoramic dental images using image processing techniques	Thesis Submitted

8. Participation in Seminars/FDP/Workshop/Conference/Webinar:

Sl. No.	Title of the event	Attended/Organized	Date	
			From	To
1.	AICTE- QIP sponsored workshop on MEMS	Thiagarajar College of Engineering	18-02-2019	24-02-2019
2.	TEQIP Sponsored One Day Workshop on Myths and Realities of R&D and IPR at EEIs: Issues, Challenges and Opportunities	Thiagarajar College of Engineering	13-07-2018	13-07-2018
3.	22nd International Symposium on VLSI Design and Test (VDAT - 2018)	Thiagarajar College of Engineering	28-06-2018	30-06-2018
4.	The Ninth International Conference on Advances in Pattern Recognition, ICAPR 2017	ISI Bangalore	27-12-2017	30-12-2017
5.	TEQIP-III Sponsored one day workshop o n “Awareness on UG Self Assessment Report of NBA”	Thiagarajar College of Engineering	13-10-2017	13-10-2017
6.	National Conference & Exhibition on e-Health, Telemedicine and Health ICT	ICT	18-06-2016	18-06-2016



7.	IEEE Indian Antenna Week, Workshop on Advanced Antenna Technology	Thiagarajar College of Engineering	06-06-2016	10-06-2016
8.	TEQIP Sponsored Workshop on "Coonvex Optimization and Random Processes for Wireless Communication Systems"	Thiagarajar College of Engineering	05-03-2015	07-03-2015
9.	Training on "Imaging and computer vision group"	Siemens technology, bangalore	27-01-2015	29-01-2015
10.	Fourth National Conference on Computer Vision, Pattern Recognition, Image Processing and Graphics"	NCVPRIPG, Jodhpur	18-12-2013	21-12-2013
11.	TEQIP Sponsored workshop on "Outcome Based Education"	Thiagarajar College of Engineering	22-10-2013	23-10-2013
12.	Special Workshop on New Outcome Based Accreditation	Thiagarajar College of Engineering	09-05-2013	11-05-2013
13.	IEEE International conference on cmmunication control and computing Technologies (ICCCCT 10)	Syed Ammal Engineering college, Ramanathapuram	08-10-2010	08-10-2010
14.	ICVGIP-2006	Thiagarajar College of Engineering	13-12-2006	16-12-2006
15.	TI development conference	Bangalore	05-11-2006	06-11-2006
16.	INAE Workshop on Image and Speech Processing	IIT, Madras	27-02-2006	29-02-2006
17.	NCIP-2005	M.S.Ramaiah School of Advanced studies, Bangalore	22-03-2005	25-03-2005
18.	Indian Conference on Computer Vision, Graphics and Image processing	ISI, Calcutta	Dec 2004	Dec 2004
19.	Quality improvement programme	National Institute of Technical Teachers Training & Research, Chennai	01-11-2004	06-11-2004



20.	Engineering Field	KLN college of information technology	29-09-2004	29-09-2004
21.	IEEE Region 10 Conference on Convergent Technologies For The Asia-Pacific.(TENCON-04)	IISC, Bangalore	14-10-2003	17-10-2003
22.	Workshop on image processing	Thiagarajar of College Engineering	19-09-2003	20-09-2003
23.	Recent trends in wireless technologies	Thiagarajar of College Engineering	18-04-2003	18-04-2003
24.	Wavelet based computer graphics and image processing	Amrita Institute of Technology and science, Coimbatore	20-01-2003	31-01-2003
25.	Performance analysis of matched filter techniques for automated detection of blood vessels in refined images, IEEE conference	IISC, Bangalore	2003	2003
26.	Image Processing	School of Computer Science and Engg., Anna University	05-07-2002	05-07-2002
27.	Program on Analog, Digital and RF-measurements	TCE and M/S Agilent Technologies	06-03-2002	06-03-2002
28.	Educators seminar cum training programme on analog,digital and RF measurements	Thiagarajar College of Engineering	2002	2002
29.	Quality improvement programme	Technical Teachers' Training Institute, Madras	23-06-1986	27-06-1986

9. Membership in Professional societies : ISTE – Life Member

10. Awards, Recognition & Achievements : Invention Award - Automated diagnosis of periodontal diseases in dental radiographs by bifurcation techniques

Any others (if any):