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1. **Area of Specialization** : Medical Image Diagnosis, Soft Computing Techniques

Research Publications

Journals Published (International)

1. **Ponni Bala, M** & Vijayachitra, S , 'Analysis of diabetic retinopathy images using Blood vessel extraction', International Journal of Advanced Engineering Research and Studies, vol.1, no. 2, pp. 89–91, 2012.
2. **Ponni Bala, M** & Vijayachitra, S , 'Detection of exudates on diabetic retinopathy Images based on Morphological operation and Connected component analysis', International Journal of Advanced Engineering Research and Studies, vol.1, no. 2, pp. 86–88, 2012.
3. **Ponni Bala, M**, Vijayachitra, S & Mohanapriya, S , 'Detection of exudates in retinal images using fuzzy techniques', Research Journal of Applied Sciences, Engineering and Technology, vol.4, no.24, pp. 5320–5324, 2012. **(H-index:12)**
4. **Ponni Bala, M** & Vijayachitra, S , 'Computerised retinal image analysis to detect and quantify exudates associated with Diabetic Retinopathy', International Journal of Computer Applications, vol. 54, no. 2, pp. 7–12, 2012.
5. Aravind, C, **Ponni Bala, M** & Vijayachitra, S , 'Automatic detection of Microaneurysms and classification of Diabetic Retinopathy Images using SVM Technique', International Journal of Computer Applications, vol. 11, no. 2, pp. 18–22, 2013.
6. **Ponni Bala, M** & Vijayachitra, S , 'Early detection and classification of microaneurysms in retinal fundus images using sequential learning methods', International Journal of Biomedical Engineering and Technology, vol. 15, no. 2, pp. 128–143, 2014. **(H-index:10)**
7. **Ponni Bala, M** & Vijayachitra, S , 'A sequential learning method for detection and classification of exudates in retinal images to assess Diabetic retinopathy', Journal of Biological Systems, vol. 22, no. 3, pp. 413-428, 2014. **(H-index:22)**
8. **Ponni Bala, M** & Vijayachitra, S , 'Extraction of retinal blood vessels and diagnosis of Proliferative Diabetic Retinopathy using Extreme Learning Machine', Journal of Medical Imaging and Health Informatics, vol. 5, no. 2, pp. 248-256, 2015. **(H-index:8)**
9. Keerthanashree T & **Ponni Bala, M** Extraction of Retinal Features in Fundus Images for Glaucoma Diagnosis, Journal of Current Trends in Information Technology, vol.6 no.1, pp.1-9, March 2016.
10. **Ponni Bala, M** & Sivachitra, M Automated Diagnostic System for Grading of Diabetic Retinopathy Stages from Fundus Images using Texture Features, International Journal on Recent and Innovation Trends in computing and communication, vol.4, no.6, pp.48-53, June 2016.

11. Amarnath Kumaran A & **Ponni Bala M** Three Element Boiler Drum Level Control Using Cascade Controller, International Journal of Research in Applied Science & Engineering Technology, Vol. 06, No.3, pp.2835-2838, March 2018.
12. Sheik Davood K & **Ponni Bala M** Similarity Identification of an Image using Various Filtering Techniques, International Journal of Innovative Technology and Exploring Engineering (IJITEE), Volume-8, Issue-6S3, pp.221-223, April 2019. (*B Impact Factor: 5.54 | Scopus Journal*)
13. **Ponni Bala M**, Keerthanashree T & Sheik Davood K Retinal Nerve Fibre Layer Segmentation and Extraction of Retinal Features for Diagnosis of Glaucoma in OCT Images, International Journal of Recent Technology and Engineering, Volume-7, Issue-6S4, pp.574-576, May 2019. (*B Impact Factor: 5.92 | Scopus Journal*)
14. E. B. Priyanka, C Maheswari, **M Ponni Bala**, S Thangavel, Local intelligence for remote surveillance and control of flow & pressure in fluid transportation system, Advances in Systems Science and Applications, Vol.19, No. 03, pp. 140-162, October 2019. (*Scopus Journal*)
15. **Ponni Bala M**, Dharanidharan M, Janani K, Kalaiabumani S, Magima Shree S, Automatic Vehicle Washing System using Programmable Logic Controller, International Journal of Scientific and Technology Research, vol.9, no.2, pp: 1568- 1571, February 2020. (*Scopus Journal*)
16. Aravind C, Suji Prasad S J, **Ponni Bala M**, Remote Monitoring And Control of Automation System With Internet of Things, International Journal of Scientific and Technology Research, vol.9, No.1, pp: 945-949, January 2020. (*Scopus Journal*)
17. E. B. Priyanka, C Maheswari, S Thangavel, **Ponni Bala M**, Integrating IoT with LQR-PID controller for online surveillance and control of flow and pressure in fluid transportation system, Journal of Industrial Information Integration, vol.17, February 2020. <https://doi.org/10.1016/j.jii.2020.100127>, (*SCI Journal*)
18. Sivachitra M, Keerthika P, Vadivel P, **Ponni Bala M**, Eye state EEG signal classification using Semi-Supervised and Unsupervised Extreme Learning Machine, Gedrag & Organisatie Review - ISSN:0921-5077, vol.33, no.2, pp 935-941, May 2020. (*Scopus Journal*)
19. K.Sheikdavood, A.Manikandan, **Dr.M.Ponni Bala**, A.Niranjan, Motion Detection Using Convolutional Networks for Smart Gadgets, Journal of Xidian University, <https://doi.org/10.37896/jxu14.5/317>, Vol. 14, No. 5, 2020, pp:2789- 2894. (*Scopus Journal*)
20. **Ponni Bala M**, Maheswari C, Janani K, Magima Shree S, Kalaiabumani S, Dharanidharan M, Automation of Hardwood Final Tower Dilution in Pulpig Process Using Distributed Control System, Gedrag & Organisatie Review - ISSN:0921-5077, vol.33, no.2, pp 2677-2686, June 2020. (*Scopus Journal*)

Paper Presented in International Conferences

1. **Ponni Bala, M** & RadhaKrishnan R, 'Use of wavelets in classification of Central Retinal Vein Occlusion in ERG', International Conference on Trends in Industrial Measurements and Automation.(TIMA 2004). MIT Chennai. December 16-18, 2004.
2. **Ponni Bala, M** & Krishnaswamy K, 'ERG waves classification using wavelet transform and Fourier Transform', INCRUIS 08, Kongu Engineering College, Perundurai Jan 4,5 & 6, 2008.
3. **Ponni Bala, M**, S.MohanaPriya Vijayachitra S, 'Detection of Exudates in Retinal Images Using Fuzzy Techniques', International Conference on Image Processing Techniques and Applications (ICIPTA-2012) held on 6th and 7th April 2012 at SASTRA University, Thanjavur.
4. **Ponni Bala, M**, Aravind C & Vijayachitra S, 'Automatic detection of Microaneurysms and classification of Diabetic Retinopathy Images using SVM Technique', Innovations in Intelligent Instrumentation, Optimization and Signal Processing, 2013, pp. 1144-1148 at Karunya University, Coimbatore.
5. **Ponni Bala, M**, Yuvasree M & Vijayachitra S, 'Extraction of Retinal Blood Vessels and Diagnosis of Proliferative Diabetic Retinopathy Using SVM Technique', International Conference on

Innovations in Information Embedded and Communication Systems (ICIIECS'14) at Karpagam University, 2014.

6. **Ponni Bala, M** & Divyanandhini M, 'Analysis and Control of Chemical concentrations in Nonlinear Wastewater Treatment', International conference on Advances in Control and computing of Analog and Digital Systems- 2014, CIT, Coimbatore.
7. **Ponni Bala, M** & Keerthanashree T, 'Extraction of Retinal features for Glaucoma Diagnosis using Digital fundus Image', International conference on Energy Environment and Engineering at CIT, Coimbatore, March 2016
8. **Ponni Bala, M** & Keerthanashree T, 'Extraction of Retinal features in Fundus Image for Glaucoma Diagnosis', Advances in Computational Intelligence and Instrumentation Technology (ACIIT-2016) at Kongu Engineering College, March 2016.
9. **Ponni Bala, M** & Sivachitra M, 'Eye state EEG signal classification using complex valued Neural classifiers', International Conference on Innovations in Information embedded and communication systems, March 2017, Karunya University, Coimbatore.
10. Amarnath Kumaran A & **Ponni Bala M**, 'Boiler drum level control using single and three element control', International Conference on Recent Research in Engineering and Technology, Cheran College of Engineering, Karur, 15 March 2018.
11. Amarnath Kumaran A & **Ponni Bala M**, 'Two Conical Tank Interacting Level Control System Using Dynamic Matrix Control', International Conference on Applied Science Engineering and Technology, Sengunthar College of Engineering, Nammakal, 17 March 2018.
12. Manikandan A & **Ponni Bala M**, ' Automatic segmentation and classification of Intracardiac Tumor and Thrombi by using Soft Computing Techniques', International Conference on Artificial Intelligence, Smart Grid and Smart City Applications (AISGSC-2019) at PSG College of Technology, Coimbatore during 3-5 January 2019.
13. **Ponni Bala M**, P.Bharathi Priya, T.Bhuvana, V.Cibi Raja, FUEL EFFICIENCY DETECTION IN VEHICLES Second National Conference on Signal Processing and Communication Systems on 07.03.2019- (NCSPCS-19) at M. Kumarasamy College of Engineering, Karur.
14. Rajalakshmi, Ponni Bala, Aravind and Suji Prasad, Monitoring and Control of Cooler Tank Level Measurement in Gas Cleaning Plant (GCP), International Coneference on Mechatronics in Energy and Environmental Protection at Bannari Amman Institute of Technology, 16-17 October 2020.