Dr. Suresha M. MCA., Ph.D.

Associate Professor
Department of PG Studies and Research in Computer Science
Kuvempu University, Shankaraghatta, Shivamogga, Karnataka, India - 577451.

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Suresha M Suresha Mallaiah

Employment History

2021 – · · · · **Associate Professor,**
Department of PG Studies and Research in Computer Science, Kuvempu University.

2007 – 2021 **Assistant Professor,**
Department of PG Studies and Research in Computer Science, Kuvempu University.

2003 – 2007 **Software Engineer,** .

Education

2014 **Doctor of Philosophy**
Thesis title: *A Study on Arecanut using Image Processing Approach*

2003 **Post Graduation : Master of Computer Applications**
Specialization: *Computer Applications*.

1997 **Under Graduation : Bachelor of Science**
Specialization: *Physics, Chemistry, Mathematics*.

Academic and Technical Skills

Programs Taught — Master of Computer Applications, Master of Science in Computer Science, Ph.D. Course work.

Courses Taught — Pattern Recognition, Image Processing, Machine Learning, Deep Learning, Data Structures, Analysis and Design of Algorithms, Data Mining, Soft Computing, RDBMS, Programming Languages(C, C++, JAVA etc.), J2EE, Unix/Linux, etc.

Coding — Java, Python, MATLAB, SQL

Databases — MySQL, MSSQL, SQLite.

Web Dev — HTML, CSS, JavaScript, Apache Web Server, Tomcat Web Server.

Patents

2021 **Country:India**
Title of the invention : *SYSTEM AND METHOD FOR CROP AND FERTILIZER RECOMMENDATION THROUGH SOIL NUTRIENT MONITORING USING CYBER PHYSICAL SYSTEM AND MACHINE LEARNING.*

Research Publications

Journal Articles

1. A. Ridwan, S. Mallaiah, S. Raghavendra, A. Muaad, and M. Al-Mohammadi, "Enhancing cctv video quality for improved segmentation and detection of suspicious human activities in crowd and non-crowded public spaces: A pre-processing approach," *Harbin Gongcheng Daxue Xuebao-Journal of Harbin Engineering University*, vol. 45, pp. 79–89, Jul. 2024.
2. A. Ridwan, M. Suresha, and M. Al-Mohammadi, "A novel method for ensuring public safety through crowd collision detection using cctv videos," *Journal of Elecrical Systems*, vol. 20, pp. 7041–7052, Mar. 2024.
3. S. K. Suresha M, "Deep occlusion-based key background extraction using pointrend instance segmentation," *Journal of Data Acquisition and Processing*, vol. 38, 2023.
4. S. Mallaiah, D. Raghukumar, S. Kuppa, and R. Raghavendra, "MQ-KPCA: Custom kernel pca for classification of microscopic images," *Journal of The Institution of Engineers (India): Series B*, vol. 103, Oct. 2022. DOI: 10.1007/s40031-022-00818-3.
5. M. Suresha, D. S. Raghukumar, and S. Kuppa, "Kumaraswamy distribution based bi-histogram equalization for enhancement of microscopic images," *International Journal of Image and Graphics*, vol. 22, no. 01, p. 2 250 003, 2022. DOI: 10.1142/S0219467822500036. eprint: https://doi.org/10.1142/S0219467822500036.
6. A. Ali Ahmed Ali and S. Mallaiah, "Survey on segmentation and recognition of handwritten arabic script," *SN Computer Science*, vol. 1, Jun. 2020. DOI: 10.1007/s42979-020-00187-y.
7. A. Ali Ahmed Ali, S. Mallaiah, and H. Ahmed, "A survey on arabic handwritten character recognition," *SN Computer Science*, vol. 1, May 2020. DOI: 10.1007/s42979-020-00168-1.
8. S. Mallaiah, S. Kuppa, and D. Raghukumar, "A study on deep learning spatiotemporal models and feature extraction techniques for video understanding," *International Journal of Multimedia Information Retrieval*, vol. 9, Jun. 2020. DOI: 10.1007/s13735-019-00190-x.
9. A. A. A. Ali and M. Suresha, "A novel features and classifiers fusion technique for recognition of arabic handwritten character script," *SN Applied Sciences*, vol. 1, no. 10, p. 1286, 2019.
10. S. M. Amani Ali Ahmed Ali, "A new design based-fusion of features to recognize arabic handwritten characters," *International Journal of Engineering and Advanced Technology*, vol. 8, no. 5, 2019.
11. S. Mallaiah and A. Ali Ahmed Ali, "Segmentation of handwritten text lines with touching of line," *International Journal of Computer Engineering and Applications*, Oct. 2019.
12. A. Ali Ahmed Ali and S. Mallaiah, "A novel approach to correction of a skew at document level using an arabic script," *International Journal of Computer Science and Information Technologies*, Aug. 2018.
13. P. Kumar and M. Suresha, "An hybrid approach of lbp and hu moment invariant features for fish species classification," *Int. J. Eng. Res. Develop.*, 2018.
14. P. Kumar and M. Suresha, "Detection of fishes in underwater videos based on signature invariant to scale and rotation," *International Journal of Scientific Research in Computer Science, Engineering and Information Technology*, 2018.
15. S. Raghavendra, A. Danti, and M. Suresha, "Correlation based template matching for recognition of bank cheque number," *Int. J. Comput. Eng. Appl*, vol. 12, pp. 61–76, 2018.
16. S. Mallaiah, "Enhancement on low contrast bird images using image size dependent normalization technique," *International Journal of Advanced Research in Computer Science*, vol. 8, pp. 628–631, Aug. 2017. DOI: 10.26483/ijarcs.v8i8.4853.
17. S. Alfasly and M. Suresha, "A simple approach for face features detection," *International Journal of Advanced Research in Computer and Communication Engineering*, vol. 5, no. 6, pp. 154–158, 2016.

18 S. A. Alfasly and M. Suresha, "Minimum aus for real-time facial expression recognition in frame sequence," *International Journal of Computer Applications*, vol. 145, no. 5, 2016.

19 S. Mallaiah, A. Danti, and S. Narasimhamurthy, "Decision trees to multiclass prediction for analysis of arecanut data," *Computer Systems Science and Engineering*, vol. 29, pp. 105–114, Jan. 2014.

20 M. Suresha, A. Danti, and S. Narasimhamurthy, "Classification of diseased arecanut based on texture features," *International Journal of Computer Applications*, pp. 1–6, 2014.

21 A. G, H. T, J. Kumari, and S. Mallaiah, "Analysis of digital images using morphlogical operations," *International Journal of Computer Science and Information Technology*, vol. 5, pp. 145–159, Feb. 2013. DOI: 10.5121/ijcsit.2013.5112.

22 S. Mallaiah, A. Danti, and S. Narasimhamurthy, "Invariant of rotation and scaling for classification of arecanut based on local binary patterns," *International Journal of Computer Science and Software Engineering*, vol. 3, p. 598, Oct. 2013.

23 M. Ravikumar and M. Suresha, "Dimensionality reduction and classification of color features data using svm and knn," *International Journal of Image Processing and Visual Communication*, vol. 1, no. 4, pp. 16–21, 2013.

24 M. Suresha, A. Danti, and S. Narasimhamurthy, "Classification of diseased arecanut based on texture," *International Journal of Computer Applications*, vol. 975, p. 8887, 2013.

25 A. Danti and Suresha, "Segmentation and classification of raw arecanuts based on three sigma control limits," *Procedia Technology*, vol. 4, pp. 215–219, 2012, 2nd International Conference on Computer, Communication, Control and Information Technology(C3IT-2012) on February 25 - 26, 2012, ISSN: 2212-0173. DOI: https://doi.org/10.1016/j.protcy.2012.05.032.

26 A. Danti and M. Suresha, "Dimensionality reduction by svm-knn approach for arecanut classification," *International Journal of Information Processing*, vol. 6, no. 3, pp. 80–88, 2012.

27 S. M, S. K. K. S, and S. K. G, "Article: Texture features and decision trees based vegetables classification," *IJCA Proceedings on National Conferecne on Advanced Computing and Communications 2012*, vol. NCACC, no. 1, pp. 21–26, Aug. 2012, Full text available.

28 S. Mallaiah and A. Danti, "Construction of co-occurrence matrix using gabor wavelets for classification of arecanuts by decision trees," *International Journal of Applied Information Systems*, vol. 4, pp. 33–39, Dec. 2012. DOI: 10.5120/ijais12-450775.

29 M. Suresha, "Classification of vegetables based on decision tree for multiclass problem," *International Journal of Image Processing and Visual Communication*, vol. 1, no. 2, p. 42, 2012.

30 M. Suresha, N. Shilpa, and B. Soumya, "Apples grading based on svm classifier," *Int. J. Comput. Appl*, vol. 975, p. 8878, 2012.

Conference Proceedings

1 M. A. S. A.-M. 1. Ahmed R. A. Shamsan Suresha M and H. N. T, "A systematic review of deep learning techniques for enhancing public safety through video surveillance," in *5th International Conference on Computational Intelligence (ICCI)*, Springer Singapore, 2024.

2 A. A. A. A. Ahmed R. A. Shamsan Suresha M and M. A. S. Al-Mohammadi, "Comparative study of mask r-cnn and pointrend for surveillance video human segmentation: Accuracy, history, evaluation datasets, challenge classification, and future prospects," in *2nd International Conference on Science, Engineering and Advanced Technology (ICSEAT)*, 2024.

3 R. Narendra, M. Suresha, and V. N. Manjunatha Aradhya, "Coslets: Recognition of emotions based on eeg signals," in *Brain Informatics*, M. Mahmud, J. He, S. Vassanelli, A. van Zundert, and N. Zhong, Eds., Cham: Springer International Publishing, 2022, pp. 40–49, ISBN: 978-3-031-15037-1.

4. M. Suresha, S. Kuppa, and D. S. Raghukumar, "Deep learning approaches for spatio-temporal clues modelling," in *Cyber Intelligence and Information Retrieval*, J. M. R. S. Tavares, P. Dutta, S. Dutta, and D. Samanta, Eds., Singapore: Springer Singapore, 2022, pp. 343–354, ISBN: 978-981-16-4284-5.

5. M. Suresha, S. Kuppa, and D. S. Raghukumar, "Pointrend segmentation for a densely occluded moving object in a video," in *2021 Fourth International Conference on Computational Intelligence and Communication Technologies (CCICT)*, Jul. 2021, pp. 282–287. DOI: 10.1109/CCICT53244.2021.00059.

6. A. A. Ahmed Ali, M. Suresha, and H. A. Mohsin Ahmed, "Different handwritten character recognition methods: A review," in *2019 Global Conference for Advancement in Technology (GCAT)*, 2019, pp. 1–8. DOI: 10.1109/GCAT47503.2019.8978347.

7. A. A. A. Ali and S. M, "Arabic handwritten character recognition using machine learning approaches," in *2019 Fifth International Conference on Image Information Processing (ICIIP)*, 2019, pp. 187–192. DOI: 10.1109/ICIIP47207.2019.8985839.

8. A. A. A. Ali and M. Suresha, "An efficient character segmentation algorithm for recognition of arabic handwritten script," in *2019 International Conference on Data Science and Communication (IconDSC)*, 2019, pp. 1–6. DOI: 10.1109/IconDSC.2019.8817037.

9. A. A. A. Ali and M. Suresha, "Efficient algorithms for text lines and words segmentation for recognition of arabic handwritten script," in *Emerging Research in Computing, Information, Communication and Applications*, Springer Singapore, 2019, pp. 387–401, ISBN: 978-981-13-5953-8.

10. S. M, D. Raghukumar, and K. S, "Enhancement of micro-texture images using bi-histogram equalization based on arcsine distribution," in *2019 Fifth International Conference on Image Information Processing (ICIIP)*, Nov. 2019, pp. 210–214. DOI: 10.1109/ICIIP47207.2019.8985864.

11. S. M, M. S, A. Danti, and H. N. T, "Enhancement of reflected faces on semi-reflecting surfaces," in *2019 Fifth International Conference on Image Information Processing (ICIIP)*, Nov. 2019, pp. 205–209. DOI: 10.1109/ICIIP47207.2019.8985950.

12. S. K. N, S. M, and H. N. T, "A novel segmentation and identification of diseases in paddy leaves using color image fusion technique," in *2019 Fifth International Conference on Image Information Processing (ICIIP)*, Nov. 2019, pp. 17–22. DOI: 10.1109/ICIIP47207.2019.8985801.

13. S. Mallaiah, S. K N, and B. Thirumalesh, "Recognition of diseases in paddy leaves using knn classifier," Apr. 2017, pp. 663–666. DOI: 10.1109/I2CT.2017.8226213.

14. B. B. Shankaragowda, M. Siddappa, and M. Suresha, "A novel approach for the brain tumor detection and classification using support vector machine," in *2017 3rd International Conference on Applied and Theoretical Computing and Communication Technology (iCATccT)*, 2017, pp. 90–93. DOI: 10.1109/ICATCCT.2017.8389112.

15. M. Suresha, K. N. Shreekanth, and B. V. Thirumalesh, "Recognition of diseases in paddy leaves using knn classifier," in *2017 2nd International Conference for Convergence in Technology (I2CT)*, 2017, pp. 663–666. DOI: 10.1109/I2CT.2017.8226213.

16. A. Danti, M. Suresha, and S. N. Murthy, "Classification of arecanuts using haarwavelets," in *International Conference on Advanced Computer Science and Information Technology, Institure of Technology and Research, Bhubaneshwar, Orissa Conference held at Bangalore*, 2013.

17. A. Danti and S. M., "Effective multiclassifier for arecanut grading," in *Wireless Networks and Computational Intelligence*, K. R. Venugopal and L. M. Patnaik, Eds., Berlin, Heidelberg: Springer Berlin Heidelberg, 2012, pp. 350–359, ISBN: 978-3-642-31686-9.

18. A. Danti and M. Suresha, "Arecanut grading based on three sigma controls and svm," in *IEEE-International Conference On Advances In Engineering, Science And Management (ICAESM -2012)*, 2012, pp. 372–376.

19. A. Danti and M. Suresha, "Texture based decision tree classification for arecanut," in *Proceedings of the CUBE International Information Technology Conference*, ser. CUBE '12, Pune, India: Association for Computing Machinery, 2012, pp. 113–117, ISBN: 9781450311854. DOI: 10.1145/2381716.2381738.

Books and Chapters

1. M. Suresha, S. Kuppa, and D. S. Raghu Kumar, "Deep learning approach for scenario-based abnormality detection," in *Advanced Security Solutions for Multimedia*, ser. 2053-2563, IOP Publishing, 2021, 11-1 to 11–21, ISBN: 978-0-7503-3735-9. DOI: 10.1088/978-0-7503-3735-9ch11.
2. M. Suresha, *Computer Vision in Agriculture*. Current Publications, 2017.
3. M. Suresha and A. Danti, *Arecanut Classification: - A Computer Vision Approach*. LAP LAMBERT Academic Publishing, 2017, ISBN: 978-3-330-06274-0.

Research Projects & Guidence

On Going Ph.D,

- Title : Deep Learning Approaches for Scenario Based Abnormality Detection in Video Surveillance System– Kuppa S
- Title : Analysis of Micro Texture Images using Machine Learning Approaches – Raghukumar D S

Awarded Ph.D,

- Title : Design of Effective Methods For Analysis of Fishes In Underwater– Puneeth Kumar B S – 2018
- Title : A Machine Learning Approach for Classification of Arecanut– Chandrashekhar H – 2019
- Title : Analysis of Diseases in Paddy Leaves: A Pattern Recognition Approach– Shrikanth K N– 2019
- Title : Analysis of Image Texture using Soft Computing Techniques– Harish Naik T– 2019
- Title : Recognition of Salient Objects in Digital Images using Neural Networks– Sandeep– 2020
- Title : Reconstruction and Recognition of Objects in Digital Images with Reflections– Madhusoodan S– 2021
- Title : An Approach to Estimation of Skew and Recognition of Arabic Handwritten Script– Amani Ali Ahmed Ali – 2022

Projects

- Title: Classification of Arecanut using Image Processing Techniques. Funded By: Kuvempu University.

Conferences, Seminars, Training Programmes, Refresher courses, etc., Organized

2012 **National Conference on Advanced Computing and Communications (NCACC' 12)**.

2015 **National Level Workshop on Pattern Classifiers**.

2021 **National Level one week Workshop on Mathematics of Machine Learning and Data Sciences with Applications**.

Conferences, Seminars, etc Attended and Papers Presented

2012 **Oral Presentation - Segmentation and Classification of Raw Arecanuts based on Three Sigma Control Limits.** Elsevier Second International Conference on Computer, Communication, Control and Information Technology (C3IT-2012).

Oral Presentation - Arecanut grading based on three sigma controls and SVM. IEEE International Conference on Advances in Engineering, Science and Management.

Oral Presentation - Effective Multiclassifier for Arecanut Grading. Springer Sixth International conference on Information Processing.

Conferences, Seminars, etc Attended and Papers Presented (continued)

Oral Presentation - Texture Based Decision Tree Classification for Arecanut. ACM International CUBE conference on IT-Engineering-Management-Telecom.

2013 **Oral Presentation - Classification of Arecanuts Using Haar Wavelets.** International Conference on Advanced Computer Science and Information Technology.

Oral Presentation - Estimation of Human Age Group based on Skin Texture Features Using Gabor Wavelets and GLCM. National Conference on Information Systems: Emerging Trends and Technologies.

Oral Presentation - Human Age Group Estimation based on Skin Texture Features. National Conference on Emerging Trends in Engineering and Management.

2015 **Session the Chair and Oral Presentation - Symbolic Representation of Texture Features for Identification of Disease in Arecanut.** International conference on Communication, Information Technology and Robotics.

2016 **Oral Presentation - Algorithms for Image Segmentation.** International Conference on Advanced IT, Engineering and Management.

Oral Presentation - Super Resolution. International Conference on Advanced IT, Engineering and Management.

2019 **Oral Presentation - Arabic handwritten character recognition using machine learning approaches.** Fifth International Conference on Image Information Processing (ICIIP).

Oral Presentation - Enhancement of reflected faces on semi-reflecting surfaces. Fifth International Conference on Image Information Processing (ICIIP).

Administrative Experience

2023 **Deputy Registrar**, Human Resources Management Section, Kuvempu University.

2018 **Nodal Officer**, All India Survey on Higher Education(AISHE) – MHRD Program, Kuvempu University.

2017 **Member**, IQAC Advisory Body, Kuvempu University.

Faculty Advisor, Boyshostel, Kuvempu University.

2015 **Coordinator,**, UCCF & IT Cell, Kuvempu University.

20148 **Assistant Nodal Officer**, All India Survey on Higher Education(AISHE) – MHRD Program, Kuvempu University.

2008 **Coordinator,**Instrumentation Maintaince Facility(IMF) Center, Kuvempu University.

Memberships of University Bodies/other organizations

BOE Chairman	Kuvempu University. 2013-14, 2014-15, 2016-17, 2017-18, 2018,19
BOE Member	Kuvempu University. 2010-11, 2011-12, 2012-13, 2013-14,2014-15
BOS Member	Kuvempu University. 2011-14, 2014-17, 2017-20
BOE Member	Karnataka University, Rani Chennamma University,Gulbarga University. 2010-11, 2011-12, 2012-13, 2013-14,2014-15
Member	Campus Network Expertise, Kuvempu University. 2010-2012
Member	Advisory Committee for Digitization of Thesis and Establishment of ETD-Lab] Kuvempu University. 2010-2012

Faculty recharging strategies

2010 **Two days workshop** The vision group of Mathematics and Computer Science organized by Dept. of Mathematics, Kuvempu University during 19th -20th Mar 2010.

2011 **Four week Refresher Course** Course on "Computer Science and Information Technology" Organized by JNU during 29.08.2011 to 23.09.2011.

Faculty recharging strategies (continued)

Refresher Course on ICT in Higher Education Delivered a talk on "Introduction to Database Management System" on 20th April 2011 at Dept. of Computer Science, Karnatak University, Dharwad.

School on Graph Algorithms Organized by Dept. of Computer Science, Karnatak University, Dharwad in collaboration with VTU, Belgaum during 26th – 31st Mar 2011.

Workshop Delivered a lecture on "Web Designing", Organized by Dept. of Computer Science, Sahyadri Arts College on 23rd Mar 2011.

2012 **Refresher Course in ICT** Delivered lecture on "Computer Fundamentals" on 26th June 2012 at Dept. of Computer Science, Karnatak University, Dharwad.

Elsevier Second International Conference "Computer, Communication, Control and Information Technology" (C3IT-2012) 25-02-2012 to 26-02-2012

2014 **Third NKN annual workshop** "NKN : E4 (Encourage, Empower, Enable, Enrich) NGN" during 15-17 Oct 2014, IIT, Guwahati.

State Level Faculty Development Program Delivered talk in State Level Faculty Development Program on "NS Tools, Open GL and Image Processing" organized by Dept. of MCA JNNCE on 11th July 2014.

UGC Sponsored National Workshop "Recent Developments in Digital Image Analysis" organized by Dept. of Computer Science, Gulbarga University, Gulbarga on 30th May 2014.

2015 **Two week ISTE short term training program** Training program on "Design of Algorithms" conducted by IIT Kharagpur from 16th to 30th May 2015.

National Workshop Workshop On "Pattern Classifiers", Kuvempu University, Shankaraghatta 26th to 28th Mar 2015.

2016 **National Level Workshop** One Week National Workshop On "Advanced Technologies In Computer Science". Kuvempu University, Shankaraghatta, 22nd to 27th-02-2016.

Fourth NKN annual workshop "NKN at the core of Cyber Space" during 21-22 Jan 2016, JNTU, Hyderabad.

2018 **Refresher Course** "Education Technology", Organized by UGC-HRDC, University of Mysore, Mysore from 01st March 2018 to 21st March 2018.

2020 **One Week Workshop** One Week Webinar on "AI & ML Applications in Image Processing Using Modern Tools" Conducted by MSRIT,Bangaluru.

Short Term Course "Artificial Intelligence and It's Applications" Contacted by NITTR, Chandigarh

Details of Visits Abroad in connection with Academic/Research Programme

Dubai, UAE **08 Days**, chair the session in International conference on "Communication, Information Technology and Robotics".