































- [10] Mi, Z., Zhang, X., Su, J., Han, D., and Su, B. (2020). Wheat stripe rust grading by deep learning with attention mechanism and images from mobile devices. *Front. Plant Sci.* 11:558126. doi: 10.3389/fpls.2020.558126
- [11] Qiu, R., Yang, C., Moghimi, A., Zhang, M., Steffenson, B. J., and Hirsch, C. D. (2019). Detection of fusarium head blight in wheat using a deep neural network and color imaging. *Remote Sens.* 11:2658. doi: 10.3390/rs11222658
- [12] Sajedi, H., Mohammadipanah, F., and Pashaei, A. (2019). Automated identification of myxobacterial genera using convolutional neural network. *Sci. Rep.* 9, 1–15. <https://doi.org/10.1038/s41598-019-54341-5>, doi: 10.1038/s41598-019-54341-5
- [13] Saleem, M. H., Potgieter, J., and Arif, K. M. (2019). Plant disease detection and classification by deep learning. *Plants* 8:468. doi: 10.3390/plants8110468
- [14] Sethy, P. K., Barpanda, N. K., Rath, A. K., and Behera, S. K. (2020). Deep feature based rice leaf disease identification using support vector machine. *Comput. Electron. Agric.* 175:105527. doi: 10.1016/j.compag.2020.105527
- [15] Su, J., Liu, C., Hu, X., Xu, X., Guo, L., and Chen, W. H. (2019). Spatio-temporal monitoring of wheat yellow rust using UAV multispectral imagery. *Comput. Electron. Agric.* 167:105035. doi: 10.1016/j.compag.2019.105035
- [16] Su, J., Yi, D., Su, B., Mi, Z., Liu, C., Hu, X., et al. (2020). Aerial visual perception in smart farming: Field study of wheat yellow rust monitoring. *IEEE Trans. Ind. Inf.* 2020:237. doi: 10.1109/TII.2020.2979237
- [17] Sun, Y., Jiang, Z., Zhang, L., Dong, W., and Rao, Y. (2019). SLIC-SVM based leaf diseases saliency map extraction of tea plant. *Comput. Electron. Agric.* 157, 102–109. doi: 10.1016/j.compag.2018.12.042
- [18] Wan, L., Cen, H., Zhu, J., Zhang, J., Du, X., and He, Y. (2020). Using fusion of texture features and vegetation indices from water concentration in rice crop to UAV remote sensing monitor. *Smart Agric.* 2:58.
- [19] Wang, A., Zhang, W., and Wei, X. (2019). A review on weed detection using ground-based machine vision and image processing techniques. *Comput. Electron. Agric.* 158, 226–240. doi: 10.1016/j.compag.2019.02.005
- [20] Wiesner-Hanks, T., Wu, H., Stewart, E., DeChant, C., Kaczmar, N., Lipson, H., et al. (2019). Millimeter-level plant disease detection from aerial photographs via deep learning and crowdsourced data. *Front. Plant Sci.* 10:1550. doi: 10.3389/fpls.2019.01550
- [21] Yang, C. (2020). Remote sensing and precision agriculture technologies for crop disease detection and management with a practical application example. *Engineering* 6, 528–532. doi: 10.1016/j.eng.2019.10.015
- [22] Zhang, Z., Flores, T., Igathinathane, C., Naik, L., Kiran, R., and Ransom, J. K. (2020a). Wheat lodging detection from UAS imagery using machine learning algorithms. *Remote Sens.* 12:1838. doi: 10.3390/rs12111838
- [23] Zhang, Z., Igathinathane, C., Li, J., Cen, H., Lu, Y., and Flores, P. (2020b). Technology progress in mechanical harvest of fresh market apples. *Comput. Electron. Agric.* 175:105606. doi: 10.1016/j.compag.2020.105606
- [24] K. N. Bhanu, H. J. Jasmine, and H. S. Mahadevaswamy, "Machine learning implementation in IoT based intelligent system for agriculture," *International Conference for Emerging Technology (INCET)*, pp. 1–5, 2020.
- [25] A. Sharma, A. Jain, P. Gupta, and V. Chowdary, "Machine learning applications for precision agriculture: a comprehensive review," *IEEE Access*, vol. 9, pp. 4843–4873, 2021.
- [26] A. Muniyasamy, "Machine learning for smart farming: a focus on desert agriculture," *2020 International Conference on Computing and Information Technology (ICCIT-1441)*, pp. 1–5, 2020.
- [27] A. Raghuvanshi, U. K. Singh, G. S. Sajja et al., "Intrusion detection using machine learning for risk mitigation in IoT-enabled smart irrigation in smart farming," *Journal of Food Quality*, vol. 2022, pp. 1–8, 2022.
- [28] V. Hemamalini, S. Rajarajeswari, S. Nachiyappan et al., "Food quality inspection and grading using efficient image segmentation and machine learning-based system," *Journal of Food Quality*, vol. 2022, pp. 1–6, 2022.
- [29] A. Raghuvanshi, U. K. Singh, and C. Joshi, "A review of various security and privacy innovations for IoT applications in healthcare," *Advanced Healthcare Systems*, vol. 4, pp. 43–58, 2022.
- [30] M. Rakhra, R. Singh, T. K. Lohani, and M. Shabaz, "Metaheuristic and machine learning-based smart engine for renting and sharing of agriculture equipment," *Metaheuristic Problems in Engineering*, vol. 2021, pp. 1–13, 2021.
- [31] M. N. Reza, I. S. Na, S. W. Baek, and K.-H. Lee, "Rice yield estimation based on K-means clustering with graph-cut segmentation using low-altitude UAV images," *Biosystems Engineering*, vol. 177, pp. 109–121, 2019.
- [32] C. Dou, L. Zheng, W. Wang, and M. Shabaz, "Evaluation of urban environmental and economic coordination based on discrete mathematical model," *Mathematical Problems in Engineering*, vol. 2021, pp. 1–11, 2021.

## Author Profile



R. Rajesh Kanna, is working as an Assistant Professor of Department of Computer Science and Engineering at Agni College of Technology, Thalambur, Chennai. Research scholar in sathyabama institute of science and technology. His research interest includes Machine Learning, Image Processing, Social Networks, and Computational Intelligence.



Dr. V. Ulagamuthalvi, Associate Professor, department of Computer Science and Engineering, Sathyabama Institute of Science and Engineering received her Ph.D degrees in Medical Image Processing from sathyabama University. She is having experience of more than 20 years in teaching. Her area of interest are Data Mining, Image Processing, Big Data Analysis.