

REFERENCES

- [1] Anas DF, Jaya I, Herdiyeni Y. Measurement and Analysis of Detecting Fish Freshness Levels Using Deep Learning Method. *Indonesian J Comput Cybern Syst*; 18. Epub ahead of print 31 October 2024. DOI: 10.22146/ijccs.95054.
- [2] Pan Z, Huang M, Zhu Q, et al. Developing a Portable Fluorescence Imaging Device for Fish Freshness Detection. *Sensors* 2024; 24: 1401.
- [3] Wang Y, Wu J, Deng H, et al. Food Image Recognition and Food Safety Detection Method Based on Deep Learning. *Computational Intelligence and Neuroscience* 2021; 2021: 1268453.
- [4] Wei Z, Chang M, Zhong Y. Fruit Freshness Detection Based on YOLOv8 and SE attention Mechanism. *AJST* 2023; 6: 195–197.
- [5] Gillani Fahad L, Fahad Tahir S, Rasheed U, et al. Fruits and Vegetables Freshness Categorization Using Deep Learning. *Computers, Materials & Continua* 2022; 71: 5083–5098.
- [6] Mukhiddinov M, Muminov A, Cho J. Improved Classification Approach for Fruits and Vegetables Freshness Based on Deep Learning. *Sensors* 2022; 22: 8192.
- [7] Zhao M, Cui B, Yu Y, et al. Intelligent Detection of Tomato Ripening in Natural Environments Using YOLO-DGS. *Sensors* 2025; 25: 2664.
- [8] Trinh TH, Nguyen HHC. Implementation of YOLOv5 for Real-Time Maturity Detection and Identification of Pineapples. *TS* 2023; 40: 1445–1455.
- [9] Samaniego LA, Peruda SR, Brucal SGE, et al. Image Processing Model for Classification of Stages of Freshness of Bangus using YOLOv8 Algorithm. In: *2023 IEEE 12th Global Conference on Consumer Electronics (GCCE)*. Nara, Japan: IEEE, pp. 401–403.
- [10] Cahyono DS, Wahyuningrum SE. ALPHABETS IMAGE IDENTIFICATION USING ADVANCED LOCAL BINARY PATTERN AND CHAIN CODE ALGORITHM. *proxies* 2021; 2: 68.
- [11] Oksuz K, Cam BC, Kalkan S, et al. Imbalance Problems in Object Detection: A Review. Epub ahead of print 11 March 2020. DOI: 10.48550/arXiv.1909.00169.
- [12] Gill MU, Rajendran P. Hyperparameter optimization of YOLO using differential evolution, multi-fidelity optimization, and Bayesian optimization. *Sci Rep*. Epub ahead of print 10 April 2026. DOI: 10.1038/s41598-026-47827-6.