

Smart Waste Management System

Alok Marathe¹, Kaushal Purohit², Shraddha Golande³, Anuja Ghotekar⁴, Ms. Sonam Boradhe⁵

B. Tech Students, Department of Computer Science Engineering^{1,2,3,4}

M. Tech Professor, Department of Computer Science Engineering⁵

Sinhgad Institute of Technology and Science, Narhe, Pune, India

Abstract: *Current waste management systems are inefficient and costly. Electronic sensors can be used to efficiently manage the waste and significantly reduce the cost of man labor. In this project raspberry Pi is used along with servo motors and conveyor belt. TensorFlow is used to build the waste object detection model. Waste will be carried by the conveyor belt and servo motors will turn the flaps in order to segregate the waste into solid and wet waste.*

Keywords: Object detection, waste management system, TensorFlow

REFERENCES

- [1] M. Shahidul Islam, M. T. Islam, A. F. Almutairi, G. K. Beng, N. Misran, and N. Amin, "Monitoring of the human body signal through the Internet of Things (IoT) based LoRa wireless network system," Appl. Sci., vol. 9, no. 9, p. 1884, May 2019
- [2] M. A. Abu, N. H. Indra, A. H. A. Rahman, N. A. Sapiee, and I. Ahmad, "A study on image classification based on deep learning and tensorflow," Int. J. Eng. Res. Technol., vol. 12, pp. 563–569, Oct. 2019.
- [3] N. Misran, M. S. Islam, G. K. Beng, N. Amin, and M. T. Islam, "IoT based health monitoring system with LoRa communication technology," in Proc. Int. Conf. Electr. Eng. Informat. (ICEEI), Bandung, IN, USA, 2019, pp. 514–517.
- [4] K. Kumar and S. Kumar, "Energy efficient link stable routing in Internet of Things," International Journal of Information Technology, vol. 10, no. 4, pp. 465–479, 2018.
- [4] J. Saunders, "Real-time discrimination of broadcast speech/music," in Proc. ICASSP'96, vol. II, Atlanta, GA, May 1996, pp. 993–996.
- [5] E. Scheirer and M. Slaney, "Construction and evaluation of a robust multi-feature music/speech discriminator," in Proc. ICASSP'97, Apr. 1997, vol. II, pp. 1331–1334.
- [6] D. Kimber and L. Wilcox, "Acoustic segmentation for audio browsers," in Proc. Interface Conf., Sydney, Australia, July 1996.
- [7] T. Zhang and C.-C. J. Kuo, "Video content parsing based on combined audio and visual information," Proc. SPIE, vol. IV, pp. 78–89, 1992.
- [8] J. P. Campbell, Jr., "Speaker recognition: A tutorial," Proc. IEEE, vol. 85, no. 9, pp. 1437–1462, 1997.
- [9] A. V. McCree and T. P. Barnwell, "Mixed excitation LPC Vocoder model for low bit rate speech coding," in IEEE Trans. Speech Audio Processing, July 1995, vol. 3, pp. 242–250.
- [10] K. El-Maleh, M. Klein, G. Petrucci, and P. Kabal, "Speech/music discrimination for multimedia application," in Proc. ICASSP'00, 2000.
- [11] Atakan Kantarci in Top 10 Voice Recognition Applications in 2021
- [12] Niko Laskaris in How to apply machine learning and deep learning methods to audio analysis [13]. Nagesh Singh Chauhan in Audio Data Analysis Using Deep Learning with Python (Part 1) [14]. S. Vetrivel et. al. / Indian Journal of Computer Science and Engineering Vol. 1 No. 4 240-250 "AN OVERVIEW OF MPEG FAMILY AND ITS APPLICATIONS"