

International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal

Volume 4, Issue 2, February 2024

Drone Detection and Identification Using Artificial Intelligence

Payal N. Bhagat¹, Harish V. Dasarwar², Muskan R. Sayyad³, Prof. Shubham D. Shelake⁴ Students^{1,2,3} and Guide⁴

Samarth Group of Institution and College of Engineering, Belhe, Maharashtra, India

Abstract: Autonomous drone detection systems offer a probable solution to overcoming the issue of potential drone misuse, such as drug smuggling, violating people's privacy, etc. Detecting drones can be difficult, due to similar objects in the sky, such as airplanes and birds. The objective of the project is to evaluate state-of-the-art models and training strategies for drone detection.

Keywords: drone detection, airplanes, drug smuggling, drones

REFERENCES

[1] K. Abbasi, A. Batool, M.A. Asghar, A. Saeed, M.J. Khan and M. ur Rehman, A vision-based amateur drone detection algorithm for public safety applications, 2019 UK/China Emerg. Technol. UCET 2019 (2019), 1–5.

[2] Y. He, I. Ahmad, L. Shi, and KH. Chang, SVM-based drone sound recognition using the combination of HLA and WPT techniques in a practical noisy environment, KSII Trans. Internet Inf. Syst. 13 (2019), no. 10, 5078–5094.

[3] M.A. Akhloufi, S. Arola and A. Bonnet, Drones chasing drones: reinforcement learning and deep search area proposal, Drones 3 (2019), no. 3, 1–14.

[4] M.S. Allahham, M.F. Al-Sa'd, A. Al-Ali, A. Mohamed, T. Khattab and A. Erbad, DroneRF dataset: a dataset of drones for RF-based detection, classification and identification, Data Br. 26 (2019).

[5] A. Bochkovskiy, C.-Y. Wang and H.-Y.M. Liao, YOLOv4: optimal speed and accuracy of object detection, arXiv preprint arXiv:2004.10934. (2020).

[6] E. Burger and G. Bordacchini, Global space policies, and programs, In Yearbook on Space Policy, Springer, Cham. 2019.

[7] Caltech Vision Lab, C.-U. Birds-200-2011, http://www.vision.caltech.edu/visipedia/CUB-200-2011.html, (2011).

[8] A. Coates, H. Lee and A.Y. Ng, An analysis of single-layer networks in unsupervised feature learning, Proc. 14th Int. Conf. Artific. Intell. Statist. (AISTATS), Fort Lauderdale, FL, USA, 2011.

[9] A. Coluccia, A. Fascista, A. Schumann, L. Sommer, A. Dimou, D. Zarpalas, F.C. Akyon, O. Eryuksel, K.A. Ozfuttu, S.O. Altinuc and F. Dadboud, Drone-vs-bird detection challenge at IEEE AVSS2019, 16th IEEE Int. Conf. Adv. Video Signal Based Surveillance, AVSS, 2019, pp. 1–8.

[10] A.R. Eldosouky, A. Ferdowsi and W. Saad, Drones in distress: A game-theoretic countermeasure for protecting UAVs against GPS spoofing, IEEE Internet Things J. 7 (2020), no. 4, 2840–2854.

