International Journal of Enhanced Research in Science, Technology & Engineering
ISSN: 2319-7463, Vol. 11 Issue 8, August-2022, Impact Factor: 7.957

Aerial Surveillance UAV Drone with IOT Camera

S. Govindasamy[1], G. Gunavarma[2], M.V. Mohammed Toshief[3], M. Sathish Kumar[4]

[1]Assistant Professor, Department of EEE, Narasu's Sarathy Institute of Technology, Poosaripatty, Salem
[2]UG Student, Department of EEE, Narasu's Sarathy Institute of Technology, Poosaripatty, Salem
[2]UG Student, Department of EEE, Narasu's Sarathy Institute of Technology, Poosaripatty, Salem
[4]UG Student, Department of EEE, Narasu's Sarathy Institute of Technology, Poosaripatty, Salem

ABSTRACT

This research paper gives an ideal way of detecting and recognizing human faces using Raspberry, and python which is part of deep learning. This report contains how deep learning an important part of the computer science field can be used to determine the face using several libraries in OpenCV along with python. This report will contain a proposed system that will help in detecting the human face in real-time. This implementation can be used on various platforms in machines and smartphones, and several software applications.

Key Words: Python, Open CV, Deep Learning, Face detection.

INTRODUCTION

Face recognition is the technique in which the identity of a human being can be identified using one individual face. Such kind of systems can be used in photos, videos, or in real-time machines. The objective of this article is to provide a simpler and easy method in machine technology. With the help of such a technology one can easily detect the face with the help of a dataset with a similar matching appearance of a person. The method in which with the help of python and OpenCV in deep learning is the most efficient way to detect the face of the person. This method is useful in many fields such as the military, security, schools, colleges and universities, airlines, banking, online web applications, gaming, etc. This system uses a powerful python algorithm through which the detection and recognition of faces are very easy and efficient. A Raspberry Pi 3 Model B has been used for the system and a camera module is attached to it.The aim is to achieve a low-cost and reliable system that can be used for various applicationswhich reduce the depth of the authentic data space. This reduced knowledge area is used for recognition.

Working Process:

Before we start, it's important to grasp that Face Detection and Face Recognition are two different things. In Face Detection, only the face of an individual will be detected by the software.In Face Recognition, the software only detects the face. Now, it should be clear that we'd like to perform Face Detection.A video feed from a webcam is nothing but a long sequence of images being updated one after the other and each of those images **i**s simply a set of pixels of various values put together in its respective position.There are plenty of algorithms behind detecting a face from these pixels and further recognizing the person in it and trying to explain them is beyond the scope of this tutorial, but since we are using the OpenCV library, which is incredibly simple to perform, face Recognition can be understood without getting deeper into the concepts.So now, let's install the packages required for face detection.

COMPONENTS USED

RASPBERRY PI 3 MODEL

WEB CAMERA

HDMI CABLE

CONCLUSION

In this we have proposed a real time object detection using raspberry pi and camera. Due to its powerful learning ability and advantages in dealing with occlusion, scale transformation and background switches, deep learning-based object detection has been a research hotspot in recent years. This paper provides a detailed review on deep learning-based object detection frameworks which handle different sub-problems, such as occlusion, clutter and low resolution, with different degrees of modifications on ANN.in this we used GLCM feature extraction.

FUTURE ENHANCEMENT

In the future we increase the performance of this process and were able to get more accuracy.

REFERENCES

[1]. X. Wu, D. Hong, J. Chanussot, Y. Xu, R. Tao, and Y. Wang, ‘‘Fourier-based rotation-invariant feature boosting: An efficient framework for geospatial object detection,’’ IEEE Geosci. Remote Sens. Lett., vol. 17, no. 2, pp. 302–306, Feb. 2020.
[2]. X. Wu, D. Hong, J. Tian, J. Chanussot, W. Li, and R. Tao, ‘‘ORSIm detector: A novel object detection framework in optical remote sensing imagery using spatial-frequency channel features,’’ IEEE Trans. Geosci. Remote Sens., vol. 57, no. 7, pp. 5146–5158, Jul. 2019.
[3]. S. Ren, K. He, R. Girshick, and J. Sun, ‘‘Faster R-CNN: Towards real time object +detection with region proposal networks,’’ IEEE Trans. Pattern Anal. Mach. Intell., vol. 39, no. 6, pp. 1137–1149, Jun. 2017.
[4]. Y. Li, S. Li, C. Chen, A. Hao, and H. Qin, ‘‘Accurate and robust video saliency detection via self-paced diffusion,’’ IEEE Trans. Multimedia, vol. 22, no. 5, pp. 1153–1167, May 2020.
[5]. K. Kang, W. Ouyang, H. Li, and X. Wang, ‘‘Object detection from video tubelets with convolutional neural networks,’’ in Proc. IEEE Conf. Comput. Vis. Pattern Recognit. (CVPR), Jun. 2016, pp. 817–825.