

**IJRETS: International Journal Of Research In Engineering, Technology
And Science,**

Volume XIII, Issue VIII, November.2020, ISSN 2454-1915, www.ijrets.com,
1st online international conference on informatics, robotics, construction & communication,
2020

**ENHANCEMENT OF AN OBJECT DIMENSIONS ESTIMATION IN 2D
IMAGES BASED ON MULTI-OBJECTIVE RECOGNITION
STRATEGY**

KANNADASAN K¹ and **ABISHA J.BENELYN²**

^{1,2} Assistant Professor

^{1,2} Department of Electronics and Communication Engineering,

^{1,2} PERI Institute of Technology, Chennai, India.

kkannadasan@peri.ac.in and ajbenelyn@gmail.com

ABSTRACT

In this paper, the multi-objective recognition algorithm has introduced to enhance the quality of object dimension measurement. It is carried out by the following constraints such as to determine the weight of an object using 2 dimensional images. It employs Haar like features and cascade classifiers to detect objects. After object detection, the proposed method employs the use of a reference object to find the Conversion Factor (CF), which is used to map the image dimensions (in pixels) to the actual dimensions. Then the true dimensions of the required object are computed. To accomplish the last task, the proposed model uses conventional 3D models like sphere, cuboid, cone, cylinder etc for objects having regular shape. For objects which do not have regular shape, like human beings, other methods are used to estimate the weight depending on the application. The proposed model employs a Haar cascade classifier to extract key patterns defining the object in an image for object recognition. To find the actual size of the object, two views of an object and a onetime calibration technique for each view has been used. Separate methods have been described in the paper for the volume and weight estimation of regular objects and irregular objects. The accuracy of the proposed method of weight calculation is approximately 94% for men's half hand dress, 97% for full hand dress, 93% for ¼ women churidar dress, and 90% for women churidar tops dress a glass of orange juice. Hence, the overall accuracy of the proposed method is 93.69%. By using a better shape recognition method where actual 3D shape of the object can be recognized, the performance of the proposed system can be improved.

keyword: Body Mass Index, Conversion Factor, Histogram of oriented gradients and camera calibration


Dr. R. PALSON KENNEDY, M.E., Ph.D.
PRINCIPAL
PERI INSTITUTE OF TECHNOLOGY
Mannivakkam, Chennai - 600 048.