

# **A NOVEL APPROACH ON CONCEPTUAL MODELING OF AN OBJECT IN A VIRTUAL ENVIRONMENT**

**E. RAJ KUMAR AND K. ANNAMALAI**

Assistant Professor (Senior), Professor, Design division, SMBS

VIT UNIVERSITY, Vellore. Tamil nadu, India.

*E-mail : rajkumar.e@vit.ac.in, kannamalai@vit.ac.in*

## **ABSTRACT**

Accurate machine vision opens up a new realm of computer applications. These applications may include mundane tasks like perception and mobile robot navigation to expert systems like complex manufacturing tasks, analysis of satellite images and medical image processing. Transforming raw camera images into useful information about the world is, however, a complex and challenging task in the field of Computer Image Processing. This is so because the images are two-dimensional and the world is three-dimensional. This paper dealt with a method to derive 3D co-ordinates from measurements and constituents of 2D images. Given a single 2D image it is possible to construct any number of 3D worlds that would give rise to the image. As a result 2D images are highly ambiguous and it becomes difficult to decide what 3D object the image portrays. In order to determine the most likely interpretation of the 2D image, the knowledge of low-level image features is essential. We have used multiple simultaneous views of the object from different cameras to accomplish this task and it is named as stereovision. VR applications are 3D worlds composed of 2D and 3D objects and often deal with 3D complex objects, for which the way the parts are connected will influence the way the complex objects can behave. Furthermore, to realize dynamic and realistic worlds, objects may need complex (physical) behaviors.

**KEYWORDS:** machine vision, 3 D images, Image processing, Virtual reality