

ABSTRACT

The use of sensor technology is experiencing rapid development in the fields of automation and artificial intelligence. However, modeling human activity signals using physical radar sensors still requires high costs and complex hardware. This research aims to develop a simulation-based radar signal model with a low-cost approach and simpler devices. The method used involves extracting depth information from images using a monocular camera as well as human pose estimation to obtain information on the distance of each body joint to the camera. The results of 110 seconds of testing with 30 frames in each second show that the synthetic signal generated has spectral characteristics that are quite identical to the actual radar signal. This finding shows for GAN model accuracy is 98.26% and the RMSE of the frequency beat is 244.564 Mhz. This radar simulation system as an alternative solution in testing and developing radar systems, especially in the field of research and education.