Motion analysis of moving objects using the sine area transform

Sabri A. Mahmoud

Computer Engineering Department, CCIS, King Saud University, P.O. Box 51178, Riyadh 11543, Saudi Arabia

A new technique for motion estimation of moving objects is presented. This technique is based on applying the sine area transform (SAT) to the image sequence. The analysis of the SAT domain indicates that the velocities of the moving objects are related to the locations of the peaks in the SAT spectrum. The formulation of applying SAT to an image sequence of moving objects along with experimental results are included to demonstrate the applicability of this technique. This technique is simple and gives accurate estimation of the velocities of moving objects. There are no limitations to the size or velocity of the moving objects.