Procedding :

2021 International Conference on Software Engineering & Computer Systems and 4th International Conference on Computational Science and Information Management (ICSECS-ICOCSIM)

Title:

Video Tracking System Using Midrange Exploration Exploitation Searching-Particle Swarm Optimization (MEESPSO) in handling occlusion and similar appearance due to crowded environment

Year: 2021, Volume: 1, Pages: 255-260

DOI Bookmark: 10.1109/ICSECS52883.2021.00053

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Abstract

Detecting the correct object plays a key role in generating an accurate and precise object tracking result. In addition, the usage of conventional method still brings the limitation in term of the accuracy and precision of the detected object. Besides, the process of object tracking in an individual frame is also challenging due to the problems such as occlusion, crowded environment, and similar appearance Therefore, a Midrange Exploration Exploitation Searching Particle Swarm Optimization (MEESPSO) algorithm with color-shape feature pattern matching methods was introducing to address the problem of the similar appearance or color that comes close to target object in crowded environment, and the presence of occlusion problem cause motion of the crowded object or the camera views. The proposed method is tested by using the MOT16-11 benchmark video dataset. This benchmark video faced the challenges such as partial occlusion, fully occlusion and similar appearance due to crowded environment in the video scene. The experiment has shown that the tracking performance of the proposed method has increased more than 92.69% accuracy and 94.67% precision.

References:

1.H. Possegger, T. Mauthner and H. Bischof, "In defense of color-based model-free tracking", *Proceedings of the IEEE Computer Society Conference on Computer Vision and Pattern Recognition*, 2015.

2.M. Al Najjar, M. Ghantous and M. Bayoumi, "Object tracking", *Lect. Notes Electr. Eng.*, 2014.

3.M. Wang, Y. Liu and Z. Huang, "Large margin object tracking with circulant feature maps", *Proceedings - 30th IEEE Conference on Computer Vision and Pattern Recognition CVPR 2017*, 2017.