Abstract

Target tracking plays a vital role in the development of battlefield surveillance, airspace surveillance and Border Patrolling. The rapid uses of infrared imagery in target tracking prevents from a wide range of attacks in border security, sea shore security. Infrared imagery is an effective method to cluster heat generating targets and it can penetrate fog, haze, dust, smoke, snow, rain and extreme darkness operate at day and night. Infrared imagery is one of the major and efficient defensive medium in surveillance and monitoring activity. In this paper, an introduction of target tracking algorithms in infrared imagery is discussed and three detection algorithms such as single Reference Frame, Moving Average and Temporal Median Filter with tracking algorithm are implemented and analyzed on multiple targets dataset. This will open the new area for the researcher in the research field of security.
- Bashir, F. and Fatih P. , &quot;Performance evaluation of object detection and tracking systems. &quot; In PETS 6, 2006.
- Elhabian, S. , Khaled, S. , and Sumaya &quot;Moving object detection in spatial domain using background removal techniques-state-of-art. &quot ; Recent patents on computer science, 2008.
- Welch, G. and Gary B. , &quot;An introduction to the Kalman filter. &quot ; 1995.
- Bernardin, K. , Alexander E. and Rainer S. , &quot;Multiple object tracking performance metrics and evaluation in a smart room environment. &quot ; Sixth IEEE International Workshop on Visual Surveillance, in conjunction with ECCV. Vol. 90. 2006.
- Sheikh, Y., and Mubarak S., "Bayesian object detection in dynamic scenes." IEEE Computer Society Conference on Computer Vision and Pattern Recognition, 2005

**Index Terms**

Computer Science

Pattern Recognition

**Keywords**

Infrared Imagery  Target Tracking Algorithms  Target Detection Algorithms

Performance parameters