

# **Robust Object Tracking System via Sparse Representation: A Review**

Syafawati Md Yusof, Kamarul Hawari Ghazali, Sunardi, Rosyati Hamid

*Faculty of Electrical & Electronics Engineering, Universiti Malaysia Pahang*

[syafawati.mdyusof@gmail.com](mailto:syafawati.mdyusof@gmail.com)

## **Abstract**

Object tracking is a challenging issue in computer vision and it has been studied by numerous researchers, with several approaches are introduced to improve the tracking performance. The challenges arise in object tracking such as occlusion, background clutter, illumination conditions and appearance changes have motivated researchers to explore a robust tracking system which can handle these problem. One of the recent tracking technique is sparse representation method where it has been exploited in many tracking-based applications as it is proven to be robust to the challenges stated earlier as compared to other tracking method. This paper reviews the recent sparse technique in several applications, focusing on the robustness and efficiency of the proposed method. More specifically, the advantages and disadvantages of the proposed algorithm in each application will be pointed out by comparing with other tracking methods. At the end of the discussion, a new tracking-based application deploying the robust sparse technique will be proposed.

*Keywords:* object tracking, robust system, sparse representation