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## Combining Sequential and Parallel Tracking Strategies in Motion Mining: New Approach

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In recent years, research into motion mining and tracking of moving objects in real-time have attracted the attention of many researchers. Therefore, a new model for motion mining based on a combination of sequential and parallel tracking strategies has been presented in this paper in order to take advantage of them and reducing their shortcomings simultaneously. In fact, combining tracker-level model helps to choose the right motion mining algorithm based on input data features, and also reduces tracking error by synchronizing tracker activity with parallel and series strategies simultaneously. In comparison with other existing solutions, this model provides important advantages such as decreasing the response time, improving the speed and increasing accuracy for tracking moving objects in the higher layers.

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### 1. Introduction

Despite associated hardware for video data collection has grown very fast, requests of human have always a more rapid growth. To overcome this problem, we need a comprehensive computer system for analyzing and deciding on the image data set. Thus, it is vital to build a system to extract important data from the image data set and analyze it correctly. Motion tracking is a prevalent technique to record the movement of objects or people for immediate or delayed motion analysis and reuse. [1]

Knowledge Discovery in Databases (KDD) is a process that aims at finding valid, useful, novel and understandable patterns in data [2]. Data mining is a process that extracts understandable knowledge

or patterns in data [3]. As a result, data mining is a part of KDD. In the praxis, KDD and data mining are used as synonym. Motion mining is also defined as a part of data mining [4].

There are many definitions for the motion mining in the literature. One of them defines motion mining as finding important patterns in image dataset which we could not achieve by searching and retrieving data set simply [5]. These patterns are used to improve decision making.

From other point of view, motion mining has been defined as knowledge discovery, patterns and the occurrences mining from image data set to explore the semantic structure of the images [6].

Motion mining identifies the important moving objects and tracks objects frame by frame as well