

**THE PACER'S GUIDE FAST BOWLING ACTION
TECHNIQUE ANALYSIS IN RECOGNIZING MIXED
ACTIONS USING DEEP LEARNING & POSE
ESTIMATION**

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ABSTRACT

Artificial intelligence has become the newest analytical powerhouse in the modern world. Since their introduction, the application of machine learning and computer vision algorithms in data analytics has gained popularity. Deep Neural Nets have not yet been used to numerous sports data processing jobs, hence it is unknown how well they perform. Analysing something is typically a challenging and time-consuming task. Due to the development of technology, Many aspects of the game cricket have also evolved and improved. DRS and Snicko are some of them.

Player shots classifications, umpire gesture recognition are also areas that studies have been conducted through machine learning approaches. The lack of studies conducted in creating a machine learning approach for fast bowling is minimal. This study is based on research in fast bowling technique analysis of mixed actions in cricket. The system is proposed to use deep neural networks with pose estimation models to present an alternative approach. Fast bowlers have been mainly tested with wearable materials where they would perform action wearing sensors attached to them to collect data. In this approach the author uses videos of fast bowlers in order to recognize the mixed actions by using pose estimates to gather key points and coordinates of them where those key points are trained in a mannerly way to identify the faulty mixed actions which can cause the back injuries of the fast bowlers.

The proposed tool can let the players identify if the action they provide is a mixed action or not and to improve their action so that they can continue a better career in cricket without the worry about their action being a mixed action. The system has some challenges where it requires the uploaded video to be in a 1 sec length of the action when backfoot is landed. This Can be improved to a greater extent by creating a larger dataset where creating the data was a challenging task .It's likely that the lowest levels of the sport don't have high-quality camera equipment to provide HD video footage for analysis, so it would be better if we could expand capability to cope with low-quality content. If we can improve the dataset and make this analysis the full run with the follow on and to predict the action live, this system will be a game changer because of the crowd that exists to use this is large and in need of such a system.