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**TheWKCoach: WICKET KEEPING TECHNIQUE ANALYSIS  
WITH DEEP NEURAL NETWORKS AND POSE ESTIMATIONS**

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## ABSTRACT

In this modern era, Artificial Intelligence has emerged as the next data analytics powerhouse. The use of Machine Learning and Computer Vision algorithms in data analytics have become a popular trend since their introduction. However, applying Deep Neural Nets to various sports data analysis tasks and studying their performance has yet to be investigated. When it comes to analysis, it's usually a difficult and time-consuming process. Because of the sport's growth with technology, AI-based wicket-keeping technique analysis has become a trending topic. This study is based on research into wicket-keeping technique analysis and the proposed use of Convolutional Neural Networks (CNN) and pose estimation models to present an alternative approach. As wicketkeeping is less researched in the past history, access to a proper dataset is challenging and his study attempts to create a proper dataset and proposed a novel architecture to predict the real-time pose estimation using Neural Network based approach.

This technique analysis tool will help wicket keepers of any level to identify their technique faults on their own and rectify them without the help of a physical coach and improve their technique to become a better wicket-keeper and this tool will also aid coaches of any level to identify technique faults of their wicket keepers and to improve their coaching strategies to make them better players. Since the proposed system has not been investigated yet and all the systems which have been implemented using pose estimation techniques are for batting and bowling the proposed system will be a major breakthrough for the sport of cricket.

Even though this first version of the program appears to be a game changer, there are other areas where we can begin to improve. There's a good likelihood that the lowest tier of the sport lacks high-quality camera facilities to give HD video footage for analysis, thus it's preferable if we can increase functionality to deal with low-quality material. Another comparable issue is that existing software is unable to target individual players from film with numerous players present. If we can develop this program to analyze such complex material, it would be a game changer once again. We can refine this to detect more tactics and even evaluate other types of athletes such as bowling and fielding, as well as spread this analysis to new sports.

**Keywords** — Classification, Machine learning, Technique analysis, Wicket-keeper, Convolution neural network, Deep learning.