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# Baseball Swing Analysis for School Level Players in Sri Lanka Using Deep Neural Networks

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# ABSTRACT

In Sri Lanka, baseball is a recognized sport, and many young players want to play professionally. However, acquiring the technical know-how required to accomplish this goal can be difficult, especially at the school level. By using deep neural networks to examine the baseball swings of Sri Lankan school-level players, this study seeks to solve this problem.

In order to accomplish this, a system was created that makes use of motion capture technologies to create a dataset of baseball swings for the deep neural network's training. The method was created to accurately analyze and give feedback on a player's technical components of their swing, with the goal of enhancing their performance. With the use of various data preprocessing and deep learning techniques, a deep neural network was trained to assess and categorize distinct swing types with accuracy.

The deep neural network's performance in tests showed how well it could identify and analyze baseball swings. The model performed well, scoring over 90% in both precision and recall. Additionally, the system was able to recognize and offer feedback on particular swing-related technical elements, such as the stance, leg motion, and shot execution. These findings show the potential of deep neural networks for sports analysis and offer important information for the growth of Sri Lankan young baseball players.

**Keywords:** Machine Learning, Deep Learning , Deep Neural Networks ,Convolutional Neural Networks, Baseball Swing Analyse, Computer Vision, Performance Analysis