

Advancing in Cricket Analytics: Novel Approaches for Pitch and Ball Detection Employing OpenCV and YOLOV8

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Abstract : In order to overcome conventional obstacles, this research paper investigates novel approaches for cricket pitch and ball detection that make use of cutting-edge technologies. The research integrates OpenCV for pitch inspection and modifies the YOLOv8 model for cricket ball detection in order to overcome the shortcomings of manual pitch assessment and traditional ball detection techniques. To ensure flexibility in a range of pitch environments, the pitch detection method leverages OpenCV's color space transformation, contour extraction, and accurate color range defining features. Regarding ball detection, the YOLOv8 model emphasizes the preservation of minor object details to improve accuracy and is specifically trained to the unique properties of cricket balls. The methods are more reliable because of the careful preparation of the datasets, which include novel ball and pitch information. These cutting-edge methods not only improve cricket analytics but also set the stage for flexible methods in more general sports technology applications.

Keywords : OpenCV, YOLOv8, cricket, custom dataset, computer vision, sports

Conference Title : ICMLC 2024 : International Conference on Machine Learning and Cybernetics

Conference Location : Mumbai, India

Conference Dates : February 12-13, 2024