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Football Highlight Generator

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ABSTRACT

This thesis presents a Football Highlight Generator system that utilizes computer vision techniques to detect the ball and goals in football videos, thereby automatically creating video highlights. The goal of this project is to assist football enthusiasts in quickly generating exciting and engaging summaries of football matches.

The proposed system leverages OpenCV, a widely used computer vision library, as its primary tool. The ball detection algorithm employed in this project utilizes image processing techniques such as color segmentation and contour analysis to accurately locate the ball in each frame of the video. The goal detection algorithm focuses on identifying the ball's trajectory and utilizing key characteristics, such as its position relative to the goalposts, to determine whether a goal has been scored.

The system's workflow involves analyzing the video frame by frame, detecting ball movement and interactions with players, and identifying instances of successful goals. To enhance the highlight generation process, additional factors such as player celebrations and crowd reactions are considered, ensuring that exciting and pivotal moments are captured.

The implemented system demonstrates promising results in accurately detecting the ball and identifying goals, leading to the creation of compelling football highlights. The generated video summaries provide users with an efficient and enjoyable way to relive the most important and exhilarating moments of a football match.

The Football Highlight Generator contributes to the field of computer vision by showcasing the application of advanced image processing techniques to the domain of sports analysis. Furthermore, it offers practical value to football enthusiasts, journalists, and coaches, who can benefit from the automatic generation of captivating match summaries without the need for manual effort.

Overall, this thesis project highlights the potential of computer vision technologies, particularly in the context of sports analysis, and demonstrates their effectiveness in generating football highlights through ball and goal detection.