**Volleyball Out of Bounds Detector**

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**Introduction**

Nowadays, affect on the sport fairness is deeply associated with new technology. With the help of Machine Learning we have created a semi-automatic ‘out-of-bounds’ detector to potentially help referees to officiate a volleyball match.

Our detector model relies on the computational analysis of the video and from single angle it can give pretty accurate results.

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**Methods**

Training YOLOv5 model with custom dataset from Roboflow interface. Data consists of 18k volleyball pictures.

Player detection with YOLO model yolo8ptx.

Court detection with user input using python OpenCV library. Which asks user to select corners of the court.

Code reviews all the frames of the video, applies detection algorithms and finally gives user potential out of bounds frames and processed video.

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**Visual Results**

- Video before processing
- Video after processing