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⑩ Player Re-Identification and Tracking: Brief Report

1. Approach & Methodology

I used a YOLO-based detector to detect players in every frame. A custom tracker assigns player IDs using a combination of spatial overlap (IOU) and simple appearance similarity. The Hungarian Algorithm matches detections to existing tracks. Each player's identity is maintained even if they temporarily leave the frame.

2. Techniques Tried & Outcomes

- Tested different IOU thresholds for association.
- Implemented basic appearance descriptors for improved ID consistency.
- Integrated trajectory visualization to confirm correct ID assignment.

3. Challenges

- Ensuring ID consistency when players overlap or occlude each other.
- Keeping the system lightweight and real-time without heavy feature extraction.
- Managing tracking accuracy when multiple players enter/exit quickly.

4. Next Steps

- Improve the feature extractor with deep embeddings (ReID models).
- Integrate camera motion compensation for sports with moving cameras.
- Deploy on GPU for faster real-time performance.

This brief report covers my approach, experiments, and future improvements.