***Objective***

To reidentify players between two separate camera views of the same match broadcastmp4 and tacticammp4 and assign consistent player IDs across both feeds.

***Approach and Methodology***

1. Object Detection Model Custom finetuned YOLOv8 best.pt. Detected classes ball goalkeeper player referee. Only players class\_id=2 were cropped and saved from every frame.
2. Feature Embedding Used pretrained ResNet18 from torchvisionmodels. Each player crop is passed through ResNet to get a 512dimensional feature vector. Normalized using L2 norm for cosine similarity comparison.
3. Player Matching For each player image in tacticamcrops computed cosine similarity with every image in broadcastcrops. Chose the best match highest similarity and printed results with scores. Matches with similarity 075 considered reliable.

***Techniques Tried***

| Component | Description |

|------------------|----------------------------------|

| YOLOv8 | Player detection + bounding boxes|

| ResNet18 | Feature extraction for matching |

| Cosine Similarity| Similarity scoring between crops |

***Challenges***

Some frames contain blurry or occluded player crops. Appearance of players is similar uniforms reducing match diversity. Detected bounding boxes can vary slightly across frames and angles.

***Results***

4200 cropped player images per view. High similarity scores 090 for most true player matches. Output is a successful mapping between players in different views.

***Future Work***

Improve robustness with jersey number recognition. Use motiontrajectorybased linking temporal tracking. Apply clustering or reranking to refine matches.

***Status***

The current pipeline is complete tested and reproducible.

Matches across camera angles are being successfully printed and the system is ready for submission