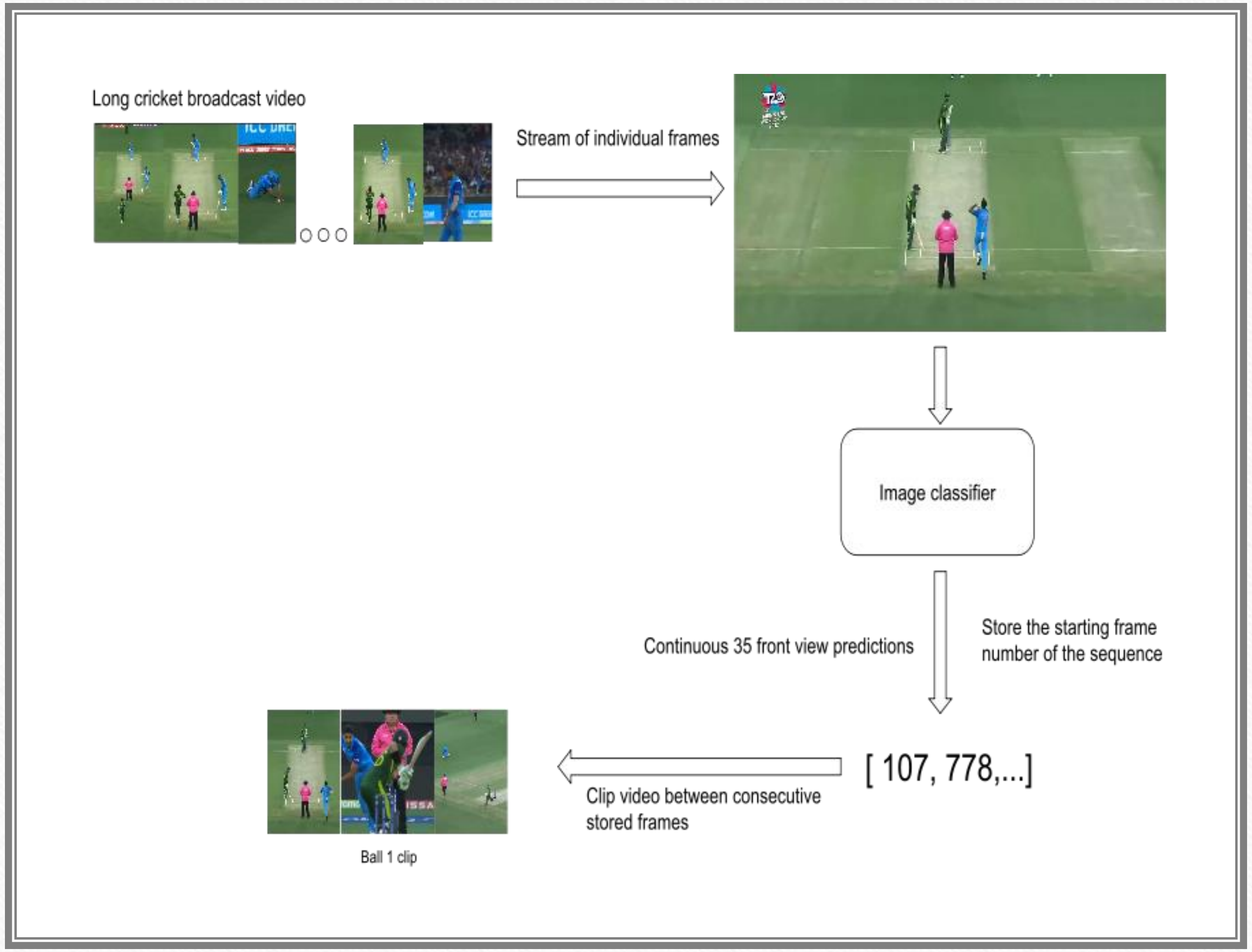
Automated Ball by Ball clipping and Event Classification in Cricket: A Deep Learning Approach.

Data set Creation

- Full-length T20I match videos were downloaded from YouTube and manually clipped ball-by-ball to create ~480 video segments.
- Each clip was labelled into four event categories: **Run**, **No Run**, **Boundary**, and **Wicket**.
- A separate image dataset (~1000 samples) was created for view classification, with balanced classes for **Front View** and **Not Front View**.

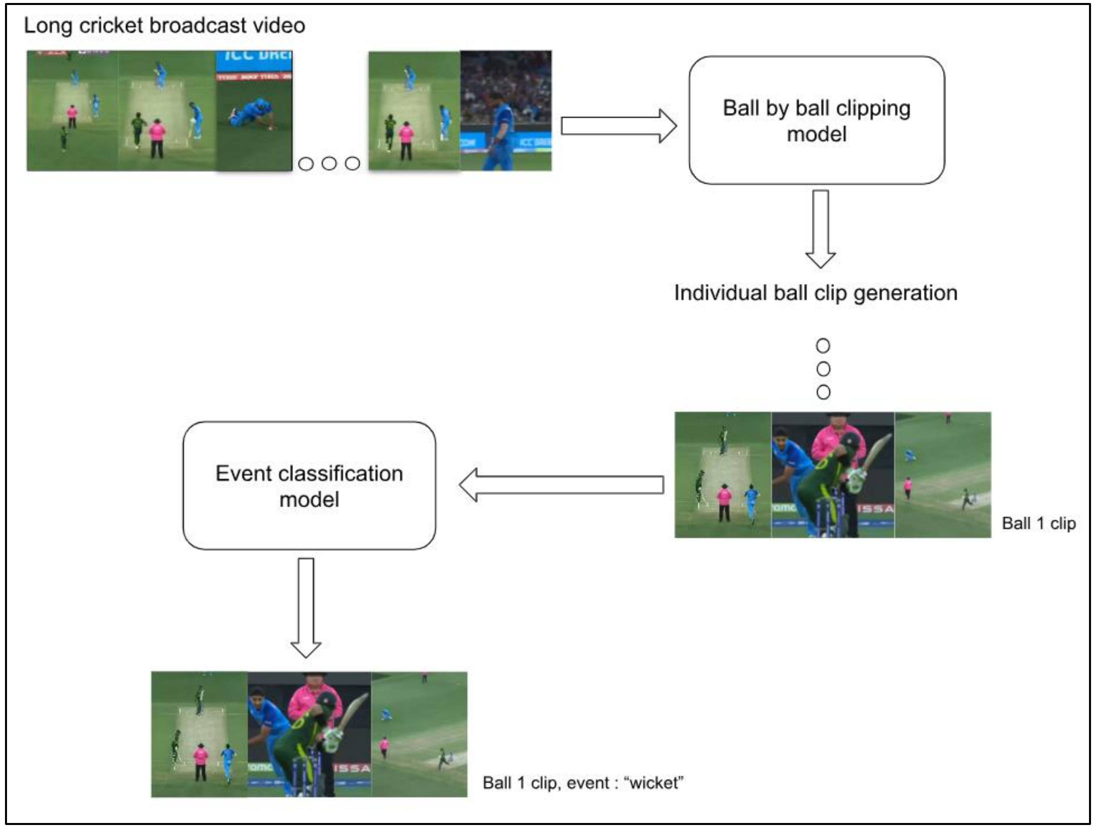
Challenges Data set Creation

- **Class Imbalance**: Wickets and Boundaries are rare → applied data augmentation
- **Scoreboard Bias**: Scoreboard was removed to avoid model overfitting



Flowchart of the model for clipping individual ball clips from a broadcast video.

- Here the CNN model determining weather a frame is a front view frame or not
- If it is, it marked it as a start of a ball.



Flowchart of the model for classifying individual ball clips into particular class.

- Here the LRCN model determining weather this clip is a wicket, run, no run or boundary.
- It gets its input from the previous CNN model.

Conclusion

- Our deep learning approach to cricket event classification and highlight generation demonstrates the potential to transform the cricket viewing experience. By automating event classification, we address some key imitations.

1. Expanding the dataset to improve classification accuracy, particularly for rare events like wickets. Also approach to automate the dataset creation process.
2. Exploring more advanced architectures, such as 3D CNNs or transformer models, to better capture temporal dynamics
3. Integrating additional features such as player tracking and shot type classification

Thank you