CS 671 - Deep Learning and its Applications
Project Presentation on Cricket Commentary Generation using Deep Learning
Group-05

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Problem Statement

Automatic generation of text-based ball by ball commentary of live cricket match by applying deep learning models.

- Teams playing, striker and non-striker batsman, bowler, shots played, current scores.

- A full fledged human-like commentary for live matches.

Motivation

- Cricket being a popular game in Indian subcontinent, but not much of practical research is done in this domain.
- Online cricket websites and apps such as Cricbuzz, provides live text-based commentary of cricket matches which is manually written.
- Cricket videos are accompanied by detailed commentaries available online.

Challenges

- Trimming and splitting the videos into frames
- Classification and localization of batsman and bowler.

- Classification of different types of cricket shots played by the batsman.
- Annotation of available cricket videos with corresponding text commentary

Literature Survey

- There has been no work done on generating text based commentary of live cricket match.
- Some amount of work has been done on sub tasks of our final goal.
  - **Cricket shot detection from videos** : The model relies on the state-of the-art techniques like saliency and optical flow to bring out static and dynamic cues and on Deep Convolutional Neural Networks (DCNN) for extracting representations. Link to paper
  - **Fine grain annotation of cricket videos** : Given a Cricket Video and corresponding textual Commentary, temporally align them with no manual intervention. Link to paper

Literature Survey

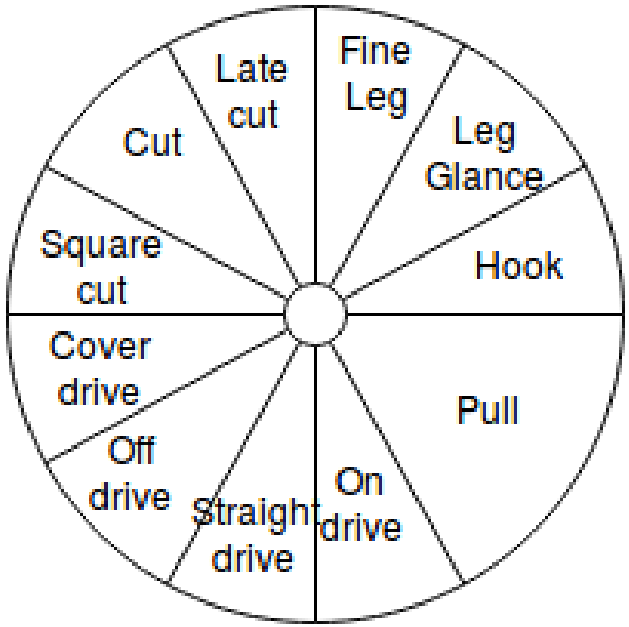
- **Generating soccer-match commentary from play event data** The deep learning model was designed by students of tokyo institute of technology. Generation of live commentary is done using encoder-decoder model which receives an event sequence as input (x_1,x_2,...,x_n), and generates a live commentary (y_1,y_2,...,y_m) from the output of the en-coder, where x_i is an event and y_j is a word. Link to paper
- **Automatic highlight extraction in cricket using frames extracted from live video** : From the given live video of a cricket match, a model is designed which breaks the video into a set of frames and using the frames highlight of the match is extracted. The model is based on artificial intelligence and computer vision and built by students of IIT Kanpur . Link to paper

Dataset

- Automatic text-based cricket commentary generation requires our model to be trained on previous cricket matches already having ball-by-ball text commentary.
- Previous cricket videos are available on internet on various websites such as YouTube,etc.
- A ball by ball text-based commentary for training purpose of above cricket videos are available on cricbuzz website.
- Several images of various batsmen while playing shot/ stance/ on the pitch.

Methodology

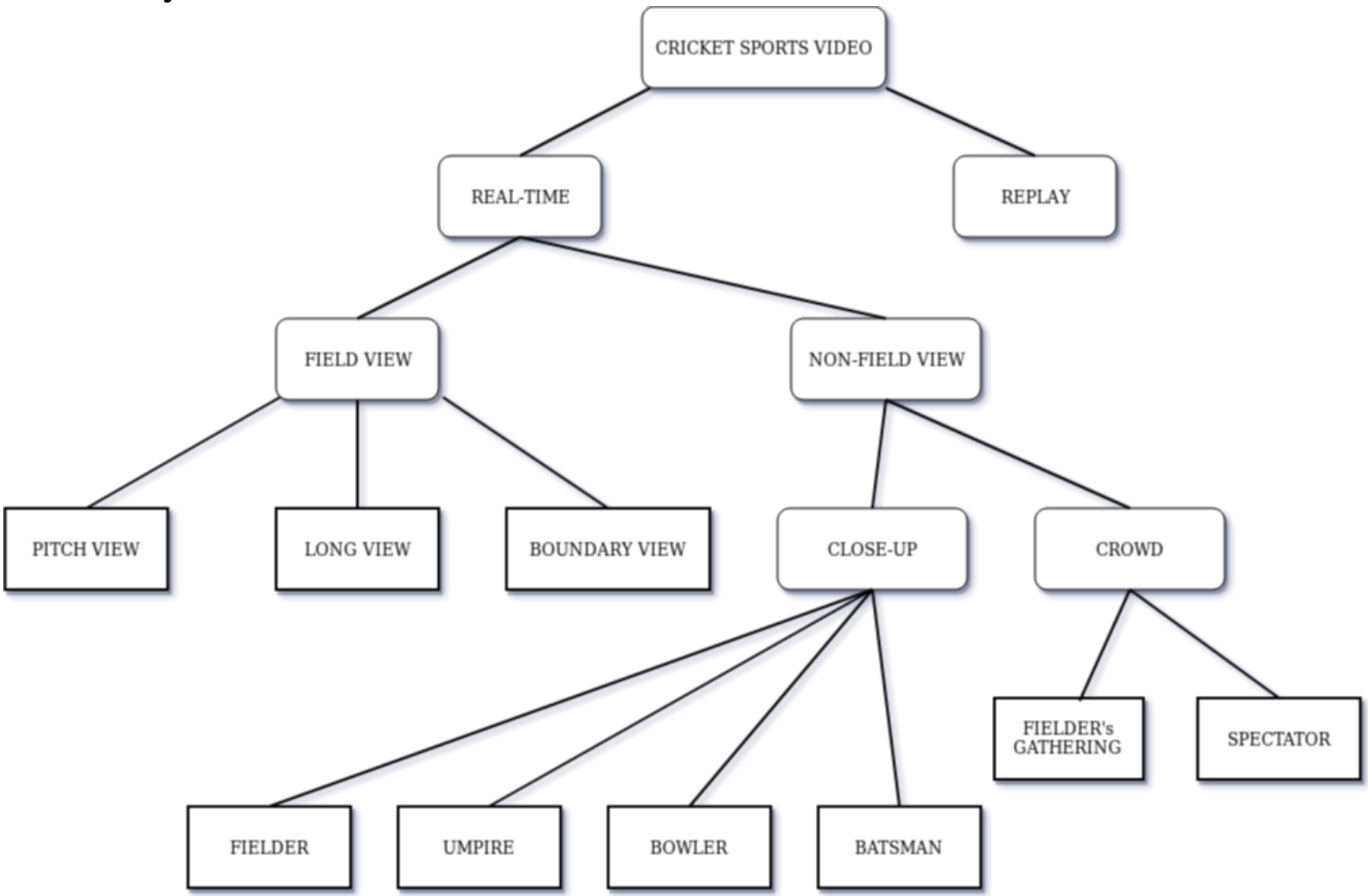
- Overview



SHOTS

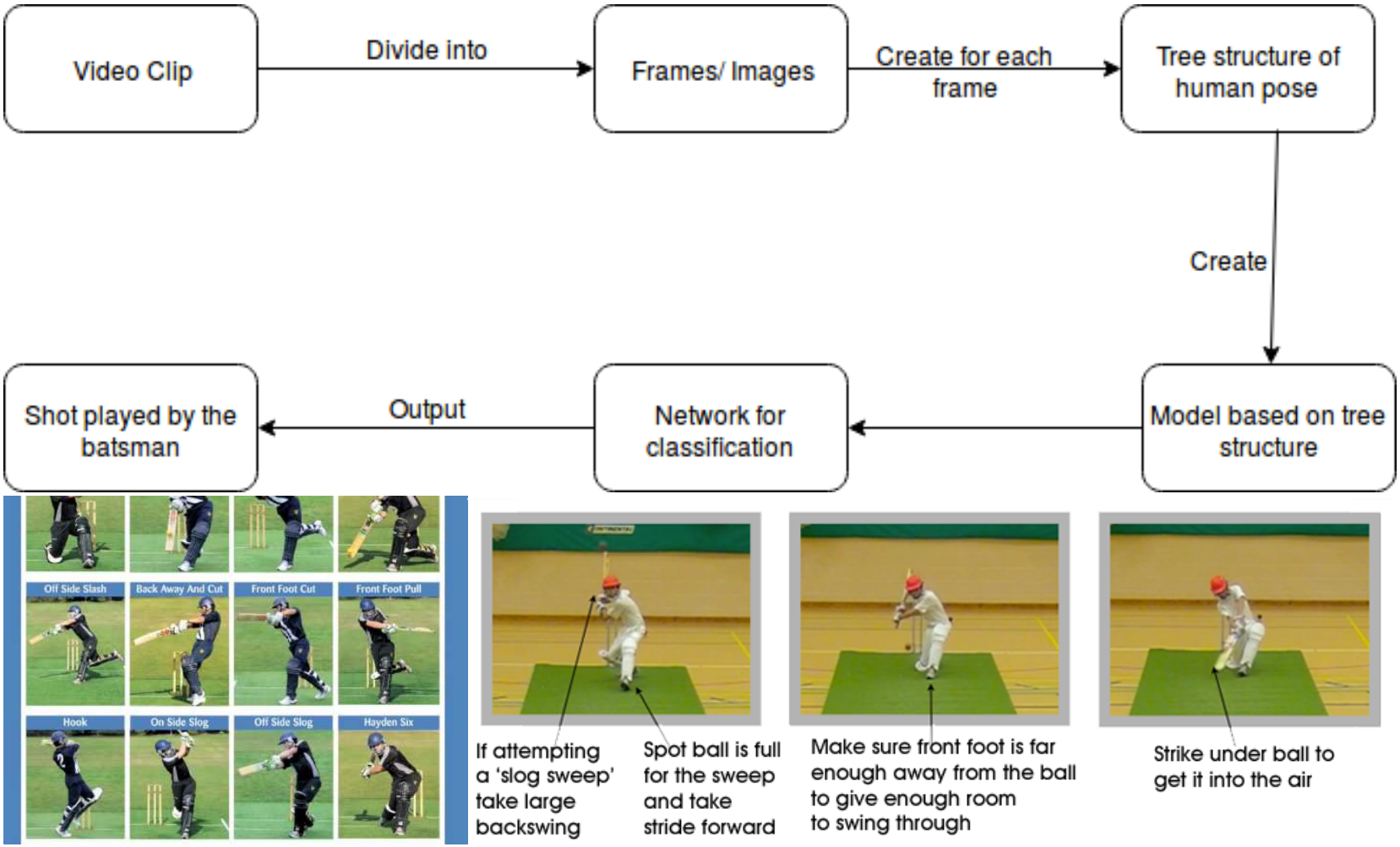
Methodology

- Hierarchy of extraction



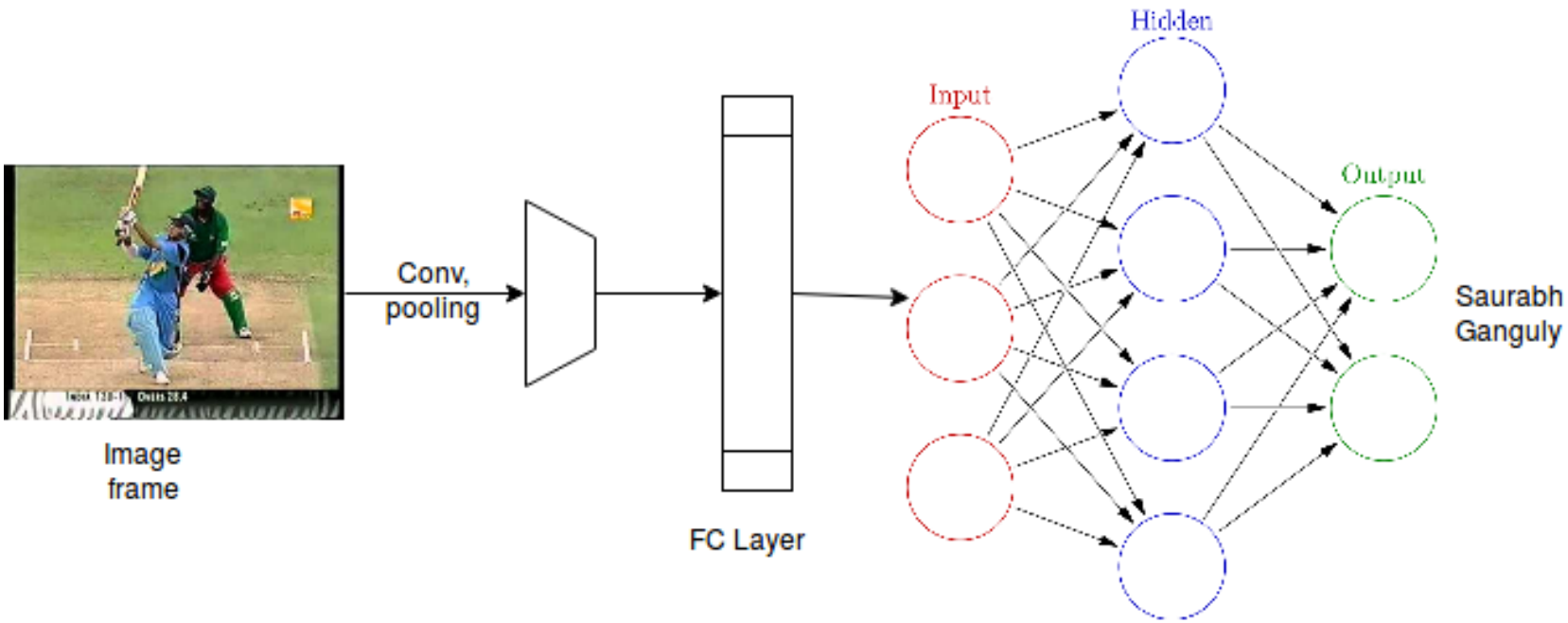
Methodology

- Convert video into frames
- Classification of shot played by the batsman.



Methodology

- Classification of the batsman, bowler.



Methodology

- Commentary generation: Keywords are ready like batsman, bowler name, team name, shot played, runs scored on the ball using score before and after the ball/ wicket obtained from the above steps.
- Our model would be trained on several commentaries (dataset from cricbuzz) having similar keywords. Our keywords acting as the input to the network generates the appropriate commentary line.