

Course Project Demo
DA323: MultiModal Data Processing

Soccer Highlights Generator- Dataset

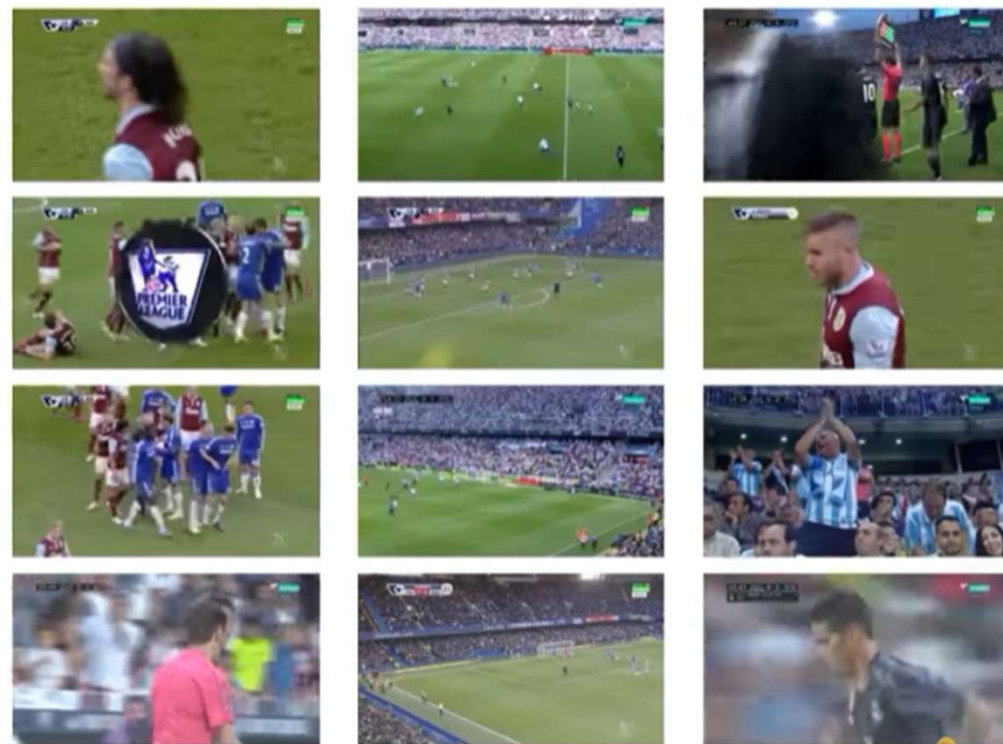
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SoccerNet

A Scalable Dataset for Action Spotting in Soccer Videos

- **SoccerNet Dataset**
 - 500 Games
 - 6637 Events
 - Sparse events distribution every 6.9 minutes (average)
- Introduce the task of **Events Spotting**



All actions cannot be defined by boundaries



All actions cannot be defined by boundaries



All actions cannot be defined by boundaries





**Goal: instant
the ball crosses
the goal line**

**Substitution: instant
a player enters the
field to substitute
another player**



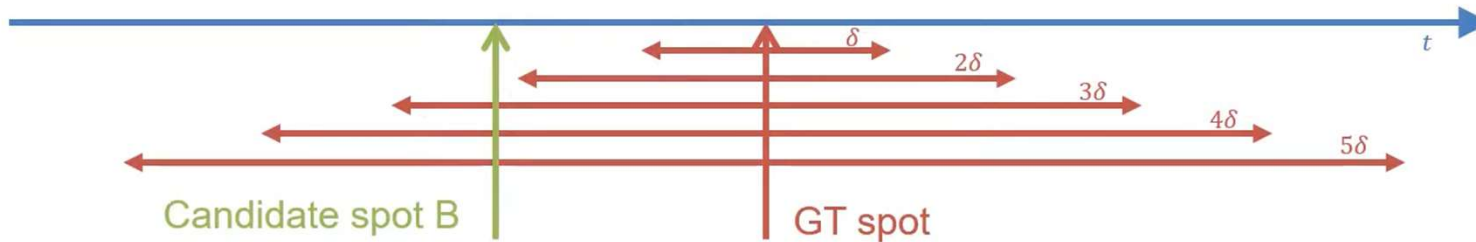
**Card: instant the
referee shows a
card to a player**

Soccer have a specific set of actions that are anchored at a specific time. In comparison with Activities, Events are anchored within a single timestamp.

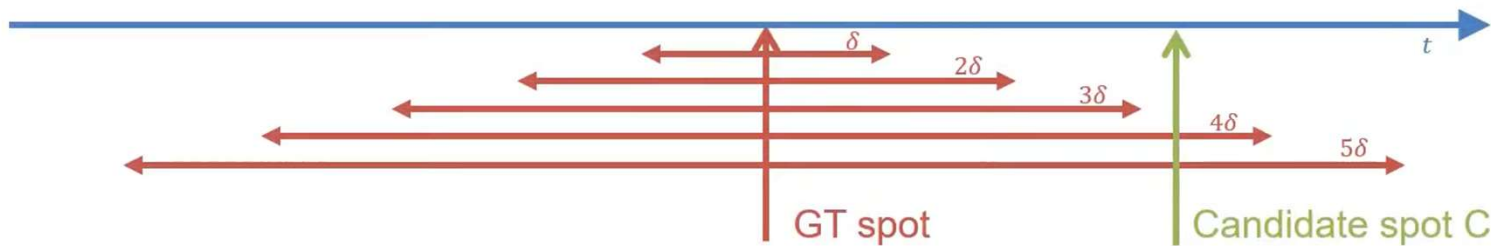




Candidate A spots the event within a tolerance of δ



Candidate B spots the event within a tolerance of 3δ



Candidate C spots the event within a tolerance of 4δ

We define a positive spot as a spot that lands within the ground truth at a tolerance δ .



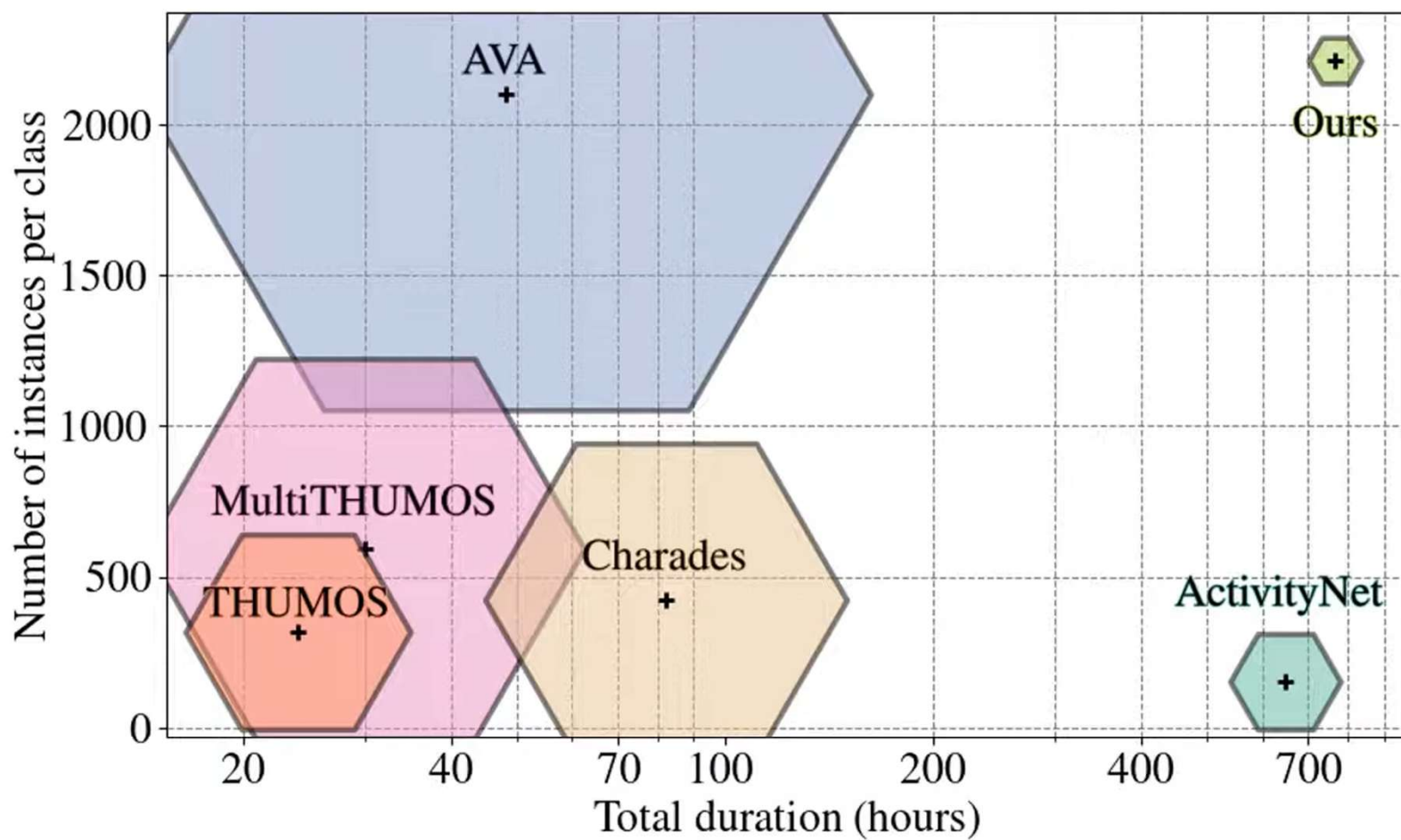
- 500 Games, 764 hours of contents
- 6637 Events, split in three classes
- Sparse events distribution every 6.9 minutes on average

— card — substitution — goal



We introduce *SoccerNet*, a soccer-centric and scalable dataset for *Sparse Event Spotting*.





Our dataset is one of the largest for localization with 764 hours of contents and 2212 instances per class.



Table 1. Comparison of benchmark datasets currently tackling the task of action localization.

Dataset	Context	#Video	#Instance	Duration (hrs)	Sparsity (event/hr)	Classes	Instance per class
THUMOS'14 [39]	General	413	6363	24	260.4	20	318
MultiTHUMOS [85]	General	400	38690	30	1289.7	65	595
ActivityNet [12]	General	19994	30791	648	47.5	200	154
Charades [65]	General	9848	66500	82	811.0	157	424
AVA [31]	Movies	57600	210000	48	4375.0	100	2100
Ours	Soccer	1000	6637	764	8.7	3	2212

It is also the sparsest with an average of only 8.7 events per hour of video (1 event every 6.9 minutes).



Table 2. Summary of the video collection for our dataset.

League	Seasons			Total
	14/15	15/16	16/17	
EN - EPL	6	49	40	95
ES - LaLiga	18	36	63	117
FR - Ligue 1	1	3	34	38
DE - Bundesliga	8	18	27	53
IT - Serie A	11	9	76	96
EU - Champions	37	45	19	101
Total	81	160	259	500

500 Videos are collected from 6 European leagues, for a total of 6637 events.



Table 6. Details on the events split between Training, Validation and Testing sets.

Split	Events			Total
	Goals	Cards	Subs	
Train	961	1296	1708	3965
Valid	356	396	562	1314
Test	326	453	579	1358
Total	1643	2145	2849	6637

500 Games are collected from 6 European leagues, for a total of 6637 events.

They are split equally in Training (300 games), Validation (100 games) and Testing (100 games) sets.



Now, Let's Discuss an implementation of Soccer Highlights Generator using MultiModal Data of Video and Audio that uses SoccerNet