Practical Course Al Status Sprint 3

2020/11/23

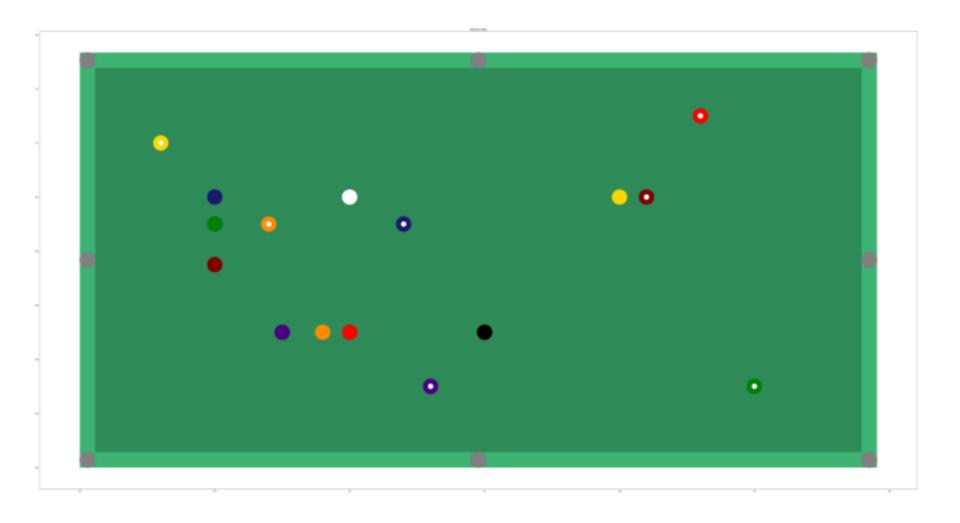
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Data Collection (ZC, SG)

- Was scheduled for last week
- Will be done this week ©

- Preparations:
 - Setup video recording software
 - Print checkerboard pattern

Rendering of Billiard Table (SG)



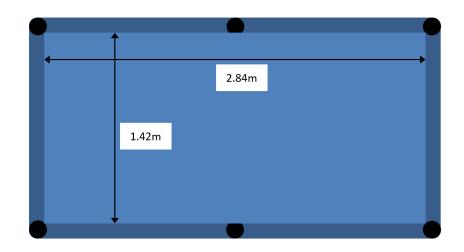
Model Tooling (SB)

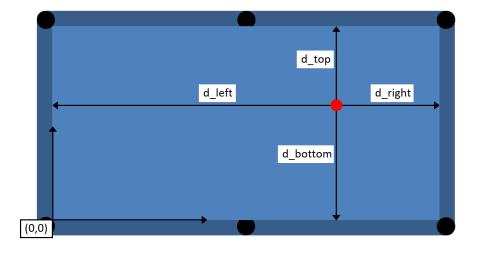
- Add parameters to LSTM Model
- Dummy dataset to test the model functionalities (due to lack of real data)
- Loading of the dataset in a custom dataset class which defines the 'labels' as the positions of the balls several seconds later

Requirements Analysis (TM)

Update requirements

Add figures

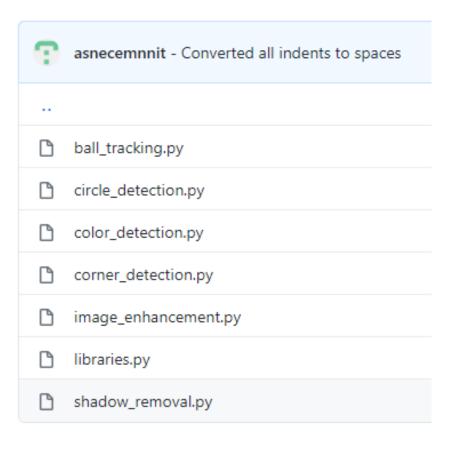




Concept for Preprocessing Pipeline (TM)

Render frames Preprocess image Transformation Extract corners Read video file Compensate lense distortion of billiard table stream · Capture frame · Transform to · Calculate affine in target frame HSV color space transformation rate matrix Classification Segmentation **Extract positions** Find circular · Classify color Project into shapes table coordinate · Classify pattern system Calculate centroids Calculate distance to table boundaries

Preprocessing Functions (AN)



Outlook

- Data collection
- Cut video into small sequences
- Create dataset, train-val-test split
- Add GPU support to model
- Implement corner detection, affine trafo
- Preprocessing end-to-end
- Render billiard table dynamically