Practical Course AI
Status Sprint 13

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Preprocessing (AN)

Preprocessing

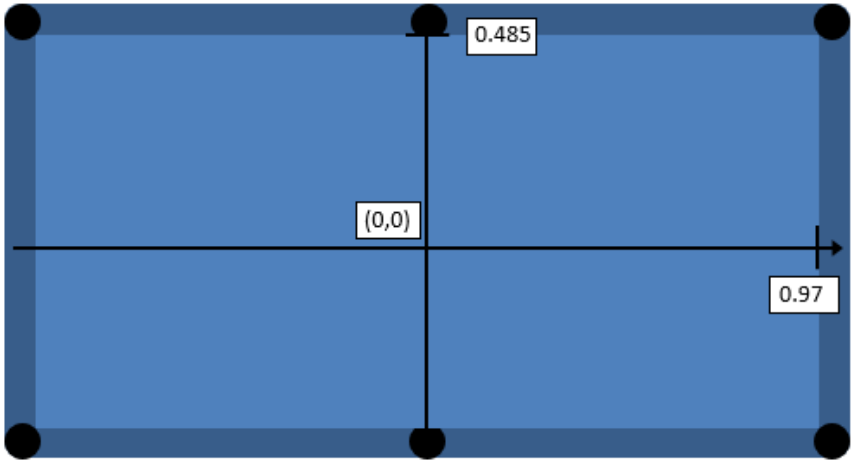
- Used constants only from constants.py in preprocessing code
- Default coordinates of absent balls set to (-0.1, -0.1) for consistency
- Conversion from cm to meters of ball coordinate values

Model

- Added dropout regularization in both LSTM and baseline linear models. Results not effective for existing networks.

Model (TM)

- Workaround for memory leak in PyTorch
- Implement BaseNet
  - Centralize general parameters
  - Apply distance calculation
  - Normalize inputs by bias correction

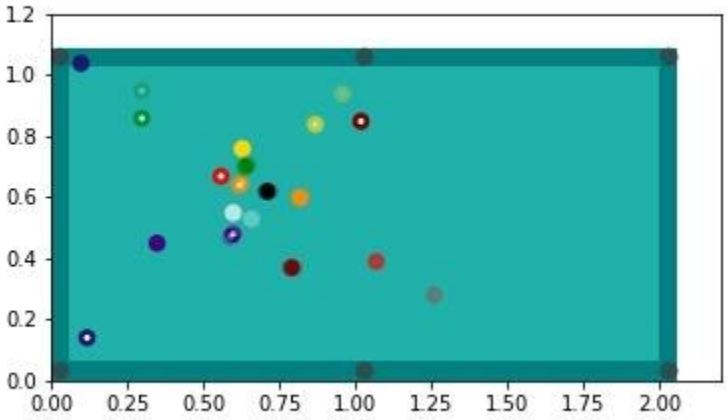


Training (SB)

- Unified prediction of singlestep and multistep into single codebase
- Prepared the prediction code in run.py for the new visualization

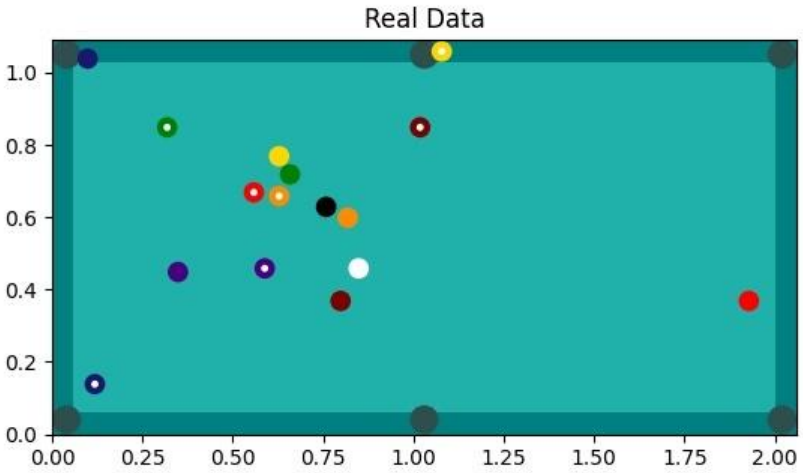
Rendering (ZC)

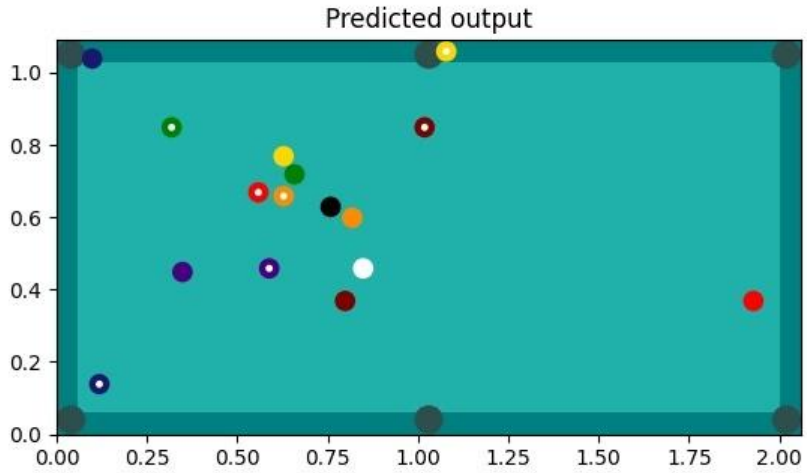
- Tried to use OpenCV to merge the predicted data and the real data in a same image/video to show their differences



Rendering (SG)

- Added support for showing Real data and predicted data side by side. For both LSTM and Linear model.





Outlook

- Overcome data bottleneck
  - New data collection
  - Optimize network design to reduce parameters
  - Advanced training techniques
- Train implemented architectures
  - Use implemented multi-step prediction loss
  - Tune hyperparameters
  - Evaluate and compare model architectures
- Implement comparison view (labels/predictions)