

Practical Course AI Status Sprint 17

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Housekeeping (ZC)

- Arranged and sorted out the previous scripts into a whole one.

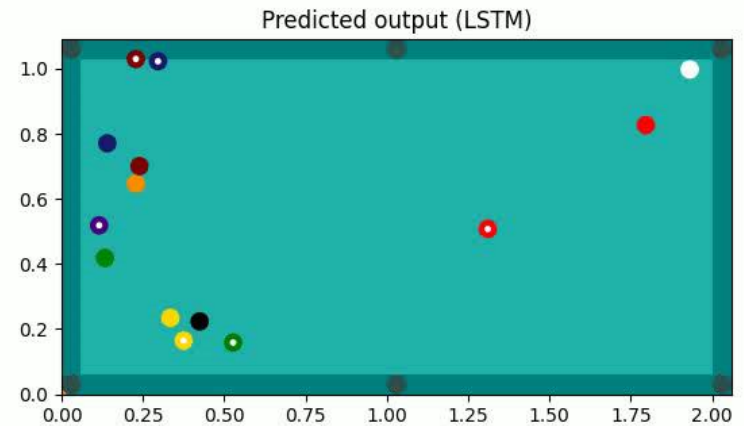
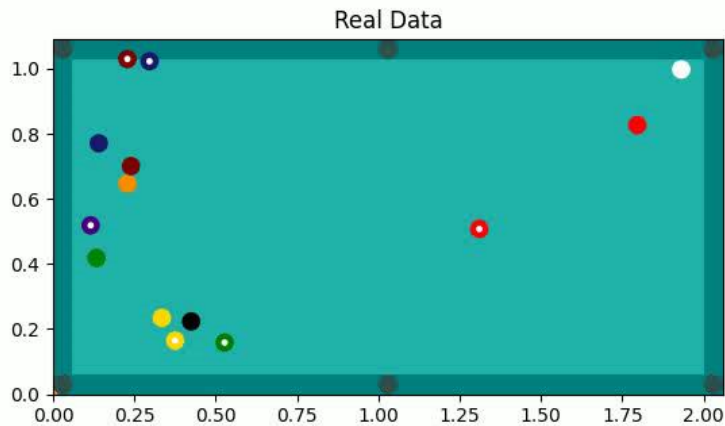
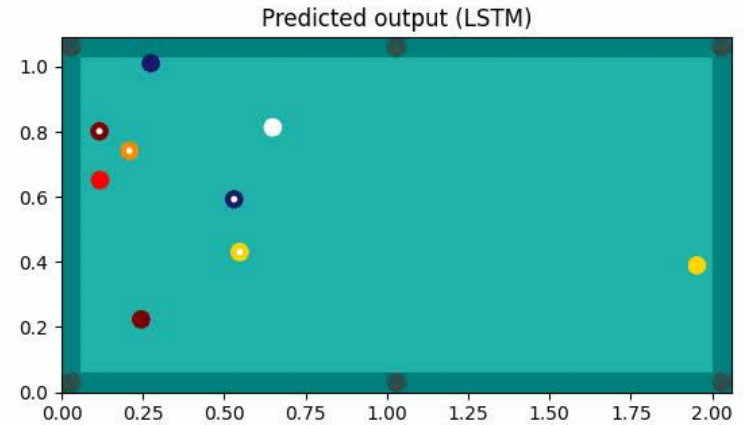
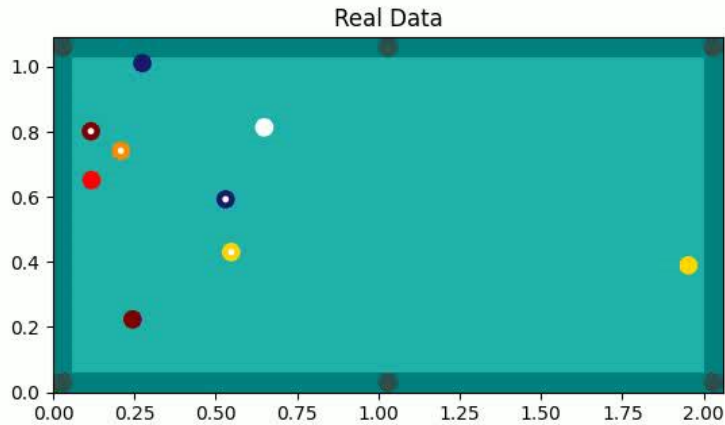
Dataset, Baseline (AN)

- Fixed the entire dataset by removing initial frames/rows with stationary white ball
- Trained Linear model on 100 epochs
- Learns linear motion, but not collision with the boundaries

Model, Training (TM)

- Dataset: Introduce latest_start
- LSTM: Predict is_moving per ball
- BaseNet: Add parametrized logic to control
 - Network input: Bias shift
 - Network output: Cartesian or polar coordinates
 - Network output: Set x_delta to 0 for !is_moving
- Training:
 - Rework loss function (two losses)
 - Add BCE loss for is_moving
 - Naive loss (out=in) to see performance in relation
 - Versioning saved models: Add train params to name
- Days of bugfixing & experimenting...

Demo (linear, recurrent)



Training (SB, SG)

- Started building larger training script to test changes with multiple different parameters
- Implemented additional loss for boundaries
- → increase training time BY A A LOT
- Also doesn't seem to help with the main issue a lot, which is learning to bounce off of the walls

Outlook

- Incorporate physical constraints
 - Non-overlapping constraint
 - Conservation of momentum
- Capture non-linearity in training
- Create evaluation report
- Prepare presentation