

Final Project Sharing

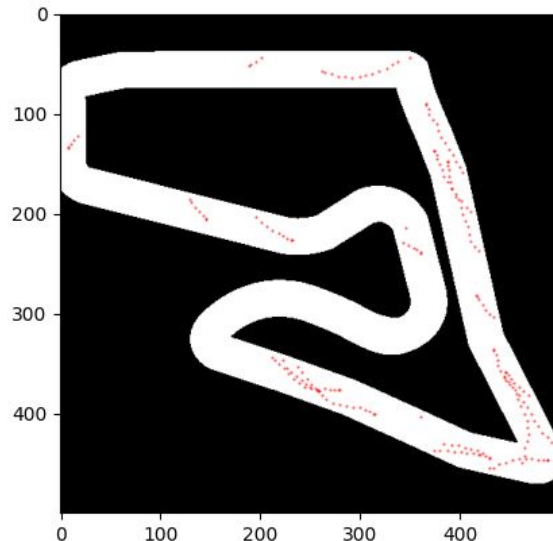
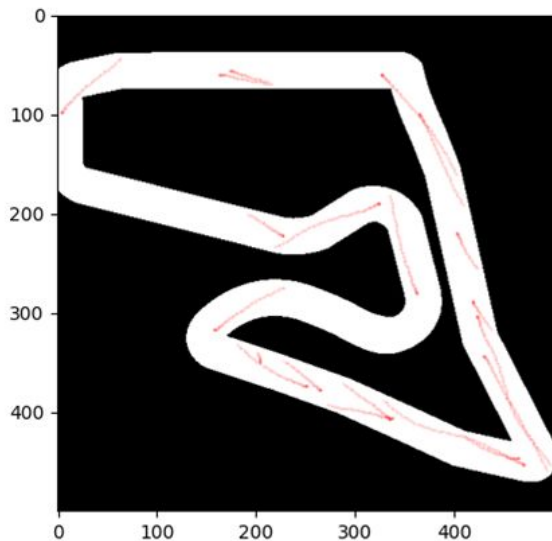
2023/12/25

Agenda

- Frame Skip (action repetition)
- Human Feature Extractor
- RNN, LSTM
- Reward shaping

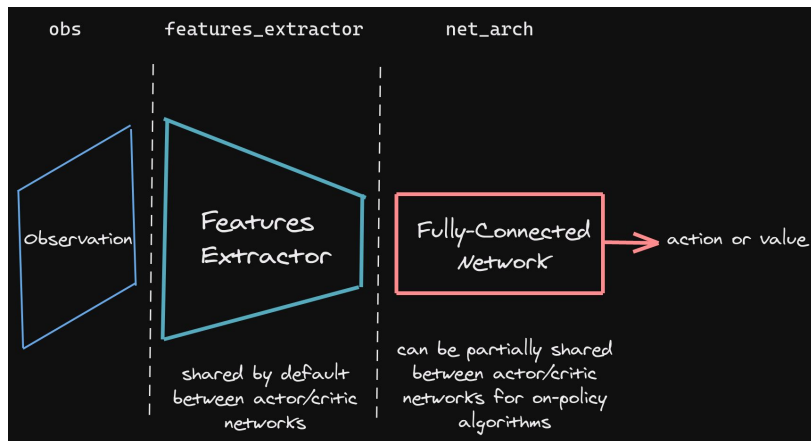
Frame Skip (Action Repetition)

- Repeated actions
- Handcrafted macro actions



Human Feature Extractor

- You may handcraft the feature extractor to ease your model's learning
 - But it may restrict your model's ability



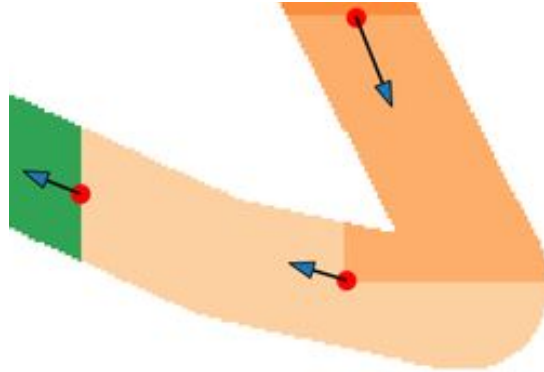
https://stable-baselines3.readthedocs.io/en/master/_images/net_arch.png

Frame Stack / RNN, LSTM

- Use more frames' information to alleviate the problem of partial observation

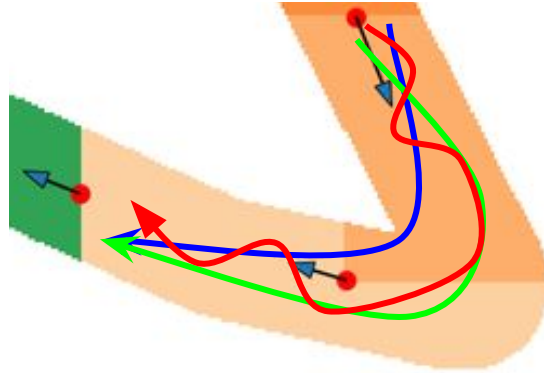
Reward Shaping

- Immediate Rewards: Progress



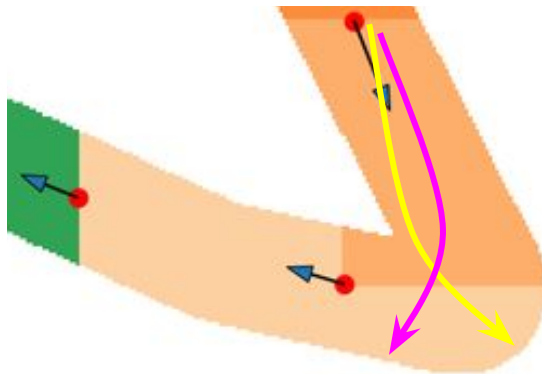
Reward Shaping

- Immediate Rewards: Progress
- Reward Shaping as a Strategy for Flexible Goal Achievement



Useful reward design

- Speed Reward (velocity)
- Collision Reward (wall_collision)
- Safety Reward (obstacle)



Close “Collision Reset” during training!!

Q & A