Supplemental Materials to Submission # 81: Trajectory Optimization for Safe Navigation in Maritime Traffic Using Historical Data

1 Hyper-parameter settings for learning experiments

Parameters	Values
Optimizer	Adam
Learning rate	10^{-3}
Batch size	4096
LSTM Hidden size	16
Number of iteration	1000
Number of trajectory samples	12
Noise dimensions	4

Table 1: experimental settings on maritime dataset

Parameters	Values
Optimizer	Adam
Learning rate	3.10^{-3}
Batch size	256
LSTM Hidden size	25
Number of iteration	3000
Number of trajectory samples	20
Noise dimensions	2

Table 2: experimental settings on pedestrian dataset

While there is no one to one correspondence between our hyperparams and that of SocialGAN, we match the equivalent hyperparams while training the models. The extra hyperparams of Social-GAN are related to its embeddings, encoder, decoder and the discriminator, None of which are used in our architecture.

Parameters	Values
Optimizer	Adam
Learning rate	10^{-3}
Batch size	1024
LSTM Hidden size	16
Number of iteration	500

Table 3: hyperparams for training the classifier used in evaluating the discriminative score

2 Qualitative Results

Figure 1 shows qualitative results of some of the generated trajectories from our generative model. Trajectories in green and red are complete historical trajectories with time steps (time=1:10) and (time=11:20) respectively. Trajectories in cyan color are generated sample trajectories of time step(time=11:20). Trajectories in blue color are the decision trajectories of time step(time=11:20) from the path planning solver. Here we observe that the sample trajectories in cyan are good representative sample of the historical trajectories in red.

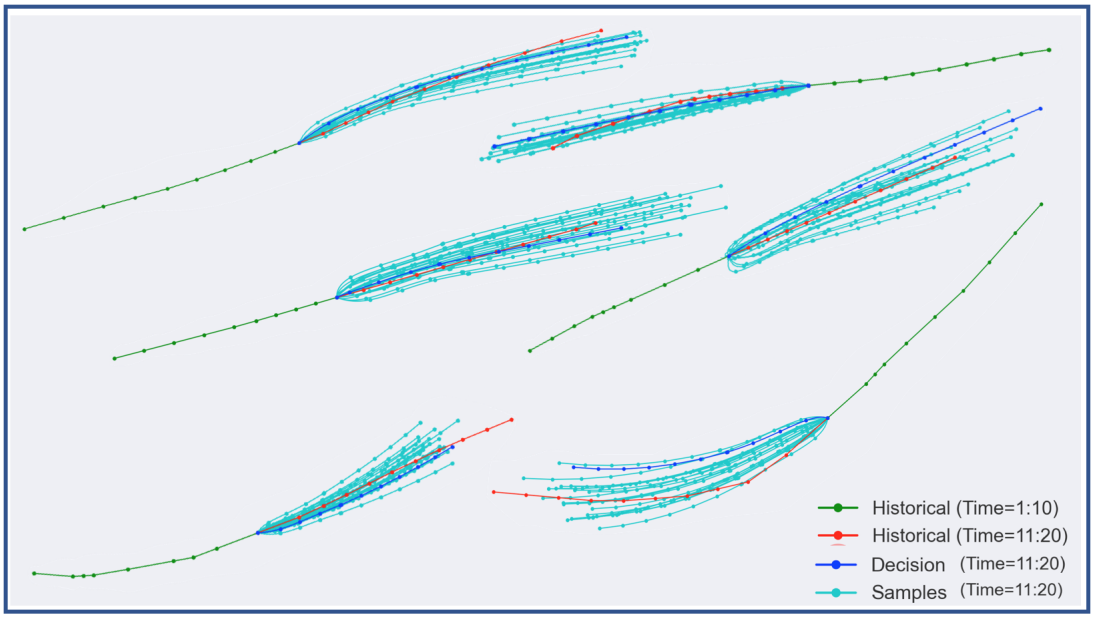

Figure 1: Qualitative result for generative model