

Meeting

07/09/2020

Shuo Zhang

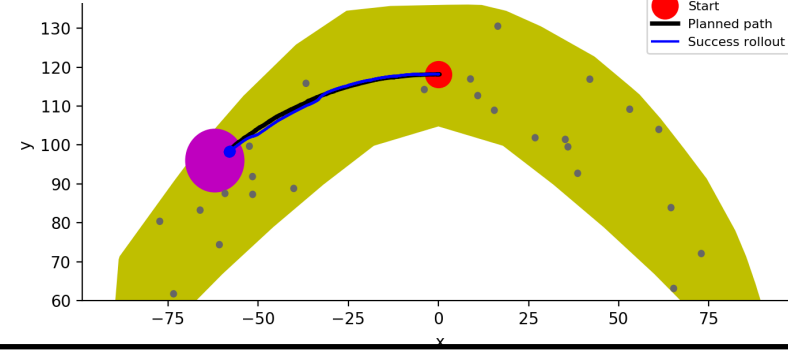
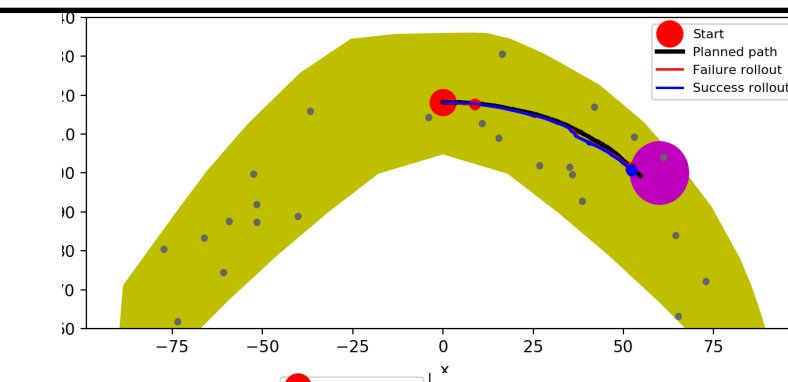
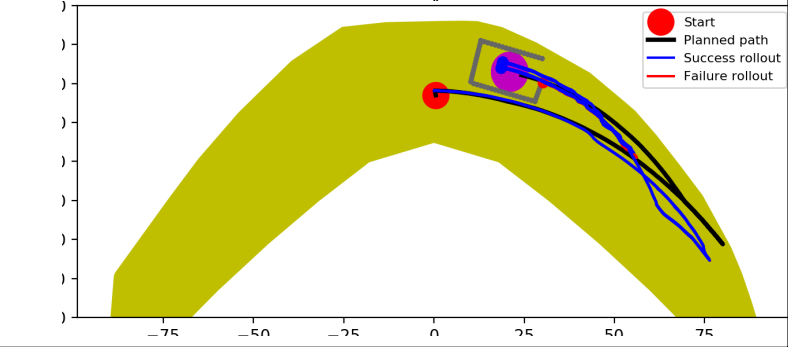
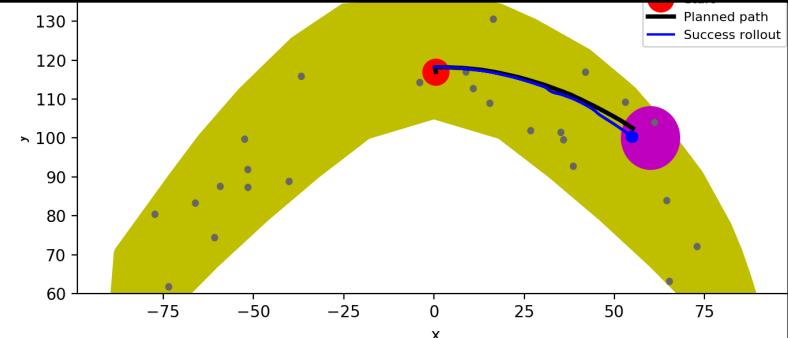
- 1) ~~1) PPO for real hand~~ ~~1) PPO for real hand~~: Done
 - 2) Clean and wrapped codes so far + managed experiment's logistic: Done
 - 3) 10 rollouts for A* and PPO on reacher and acrobot: Done
 - 4) 10 rollouts for gazebo: Done (on my own machine, 14 hours)
 - 5) Got all statistics: Done
 - 6) Write rollout ros package codes for real hand:
- Just to start

Progress

	A* Plan + Rollout + Statistic	PPO Plan + Rollout + Statistic	Online Method
Acrobot	Done	Done	Need to discuss in more details
Reacher	Done	Done	Need to discuss in more details
Gazebo Hand (normal obstacles + horseshoe)	Done	Done	Need to discuss in more details
Real Had (no obstacles)	Plan is done. (Wait for Mridul until the marker issues fixed)	Plan is done. (Wait for Mridul until the marker issues fixed)	Need to discuss in more details

Gazebo Hand Statistics

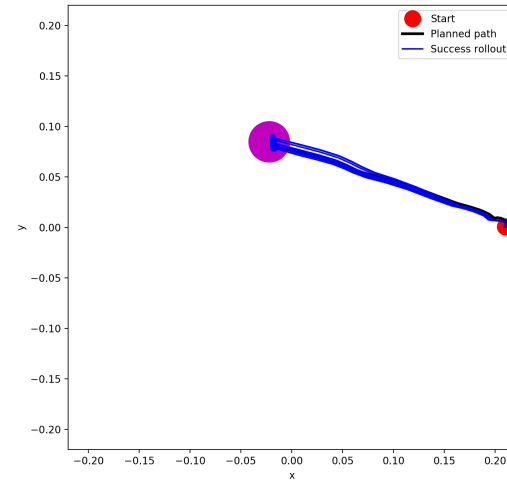
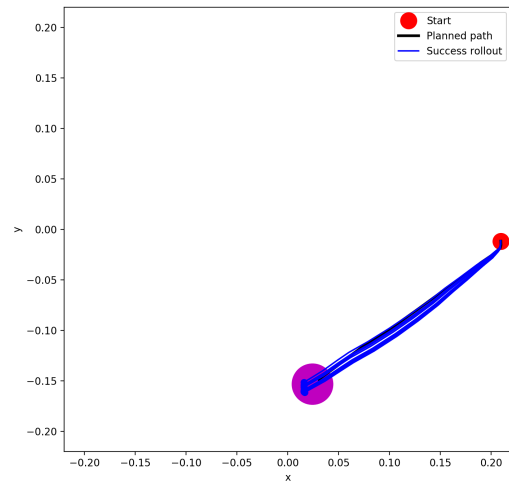
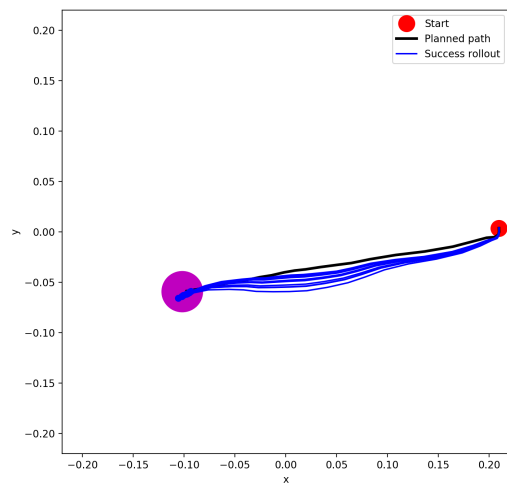
[illegible]



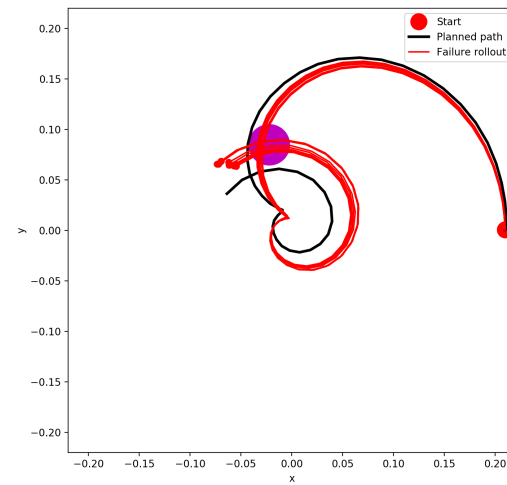
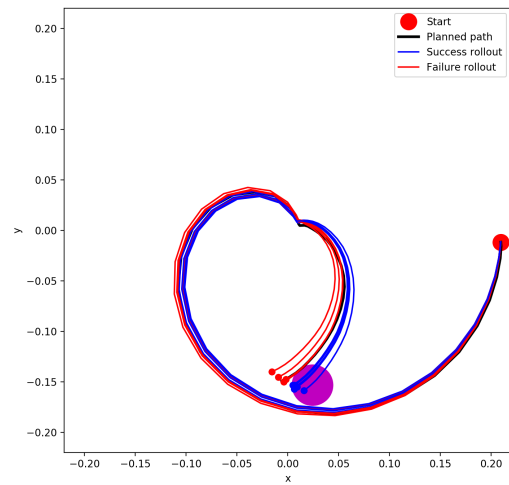
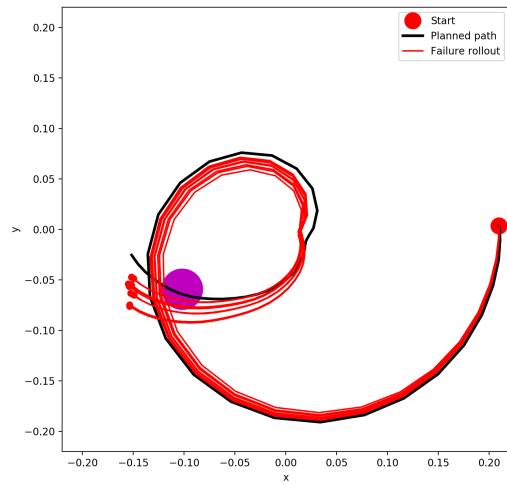
Policy

Reacher-v2 Statistics

goal location (method)	goal reach rate	rollout path RMSE relative to plan path [mm]	path length [mm]		number of path steps	last distance to goal [mm]	
			plan	rollout		plan	rollout
1 (A*)	100%	0.01025±0.00091	0.22799	0.24568±0.00221	16	0.00778	0.00993±0.00112
1 (policy)	60%	0.00599±0.00203	0.87181	0.86061±0.00931	51	0.03055	0.02295±0.00937
2 (A*)	100%	0.0034±0.00065	0.24392	0.24707±0.00159	26	0.00859	0.00509±0.00105
2 (policy)	0%	0.01801±.00191	0.72881	0.78558±0.01989	51	0.06385	0.04545±0.00596
5 (A*)	100%	0.00871±0.00373	0.31887	0.32344±0.00551	23	0.00449	0.00598±0.00154
5 (policy)	0%	0.01307±0.00383	1.05959	1.00686±0.01665	51	0.06024	0.05161±0.00201



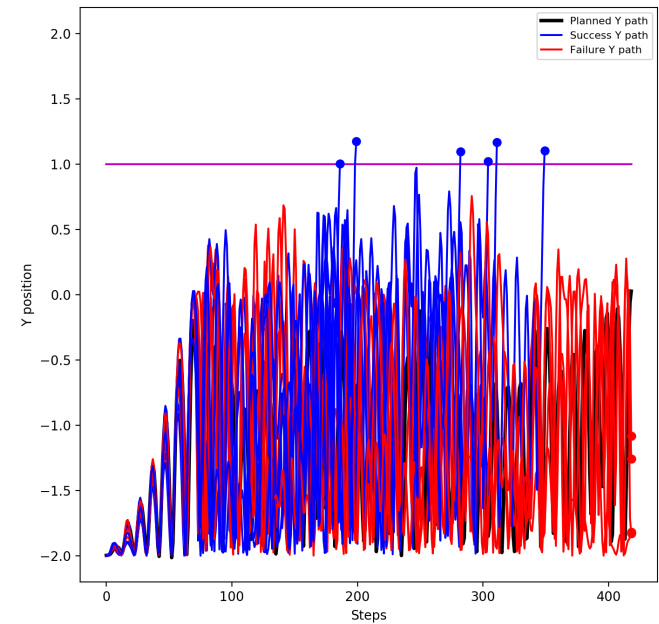
A*



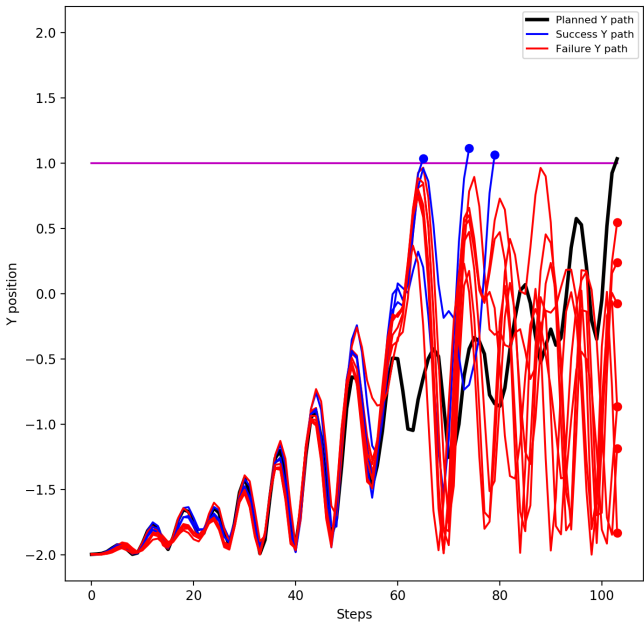
Policy

Acrobot-v1 Statistics

goal location (method)	goal reach rate	rollout path RMSE relative to plan path [mm]	path length [mm]		number of path steps		last distance to goal [mm]	
			plan	rollout	plan	rollout	plan	rollout
1 (A*)	60%	0.77±0.09	104.91	94.52±28.19	419	331.3±85.19	0.97	1.00±1.24
1 (policy)	30%	0.61±0.11	17.83	23.13±6.92	104	94.9±14.26	0	1.10±0.98

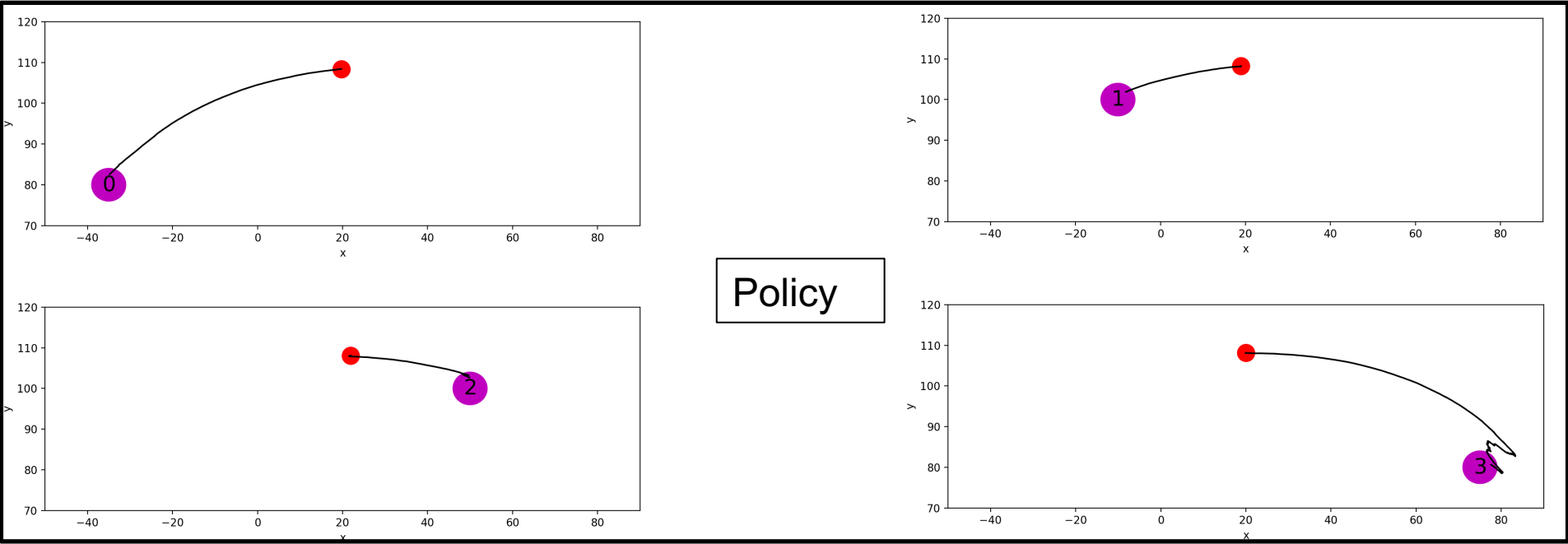
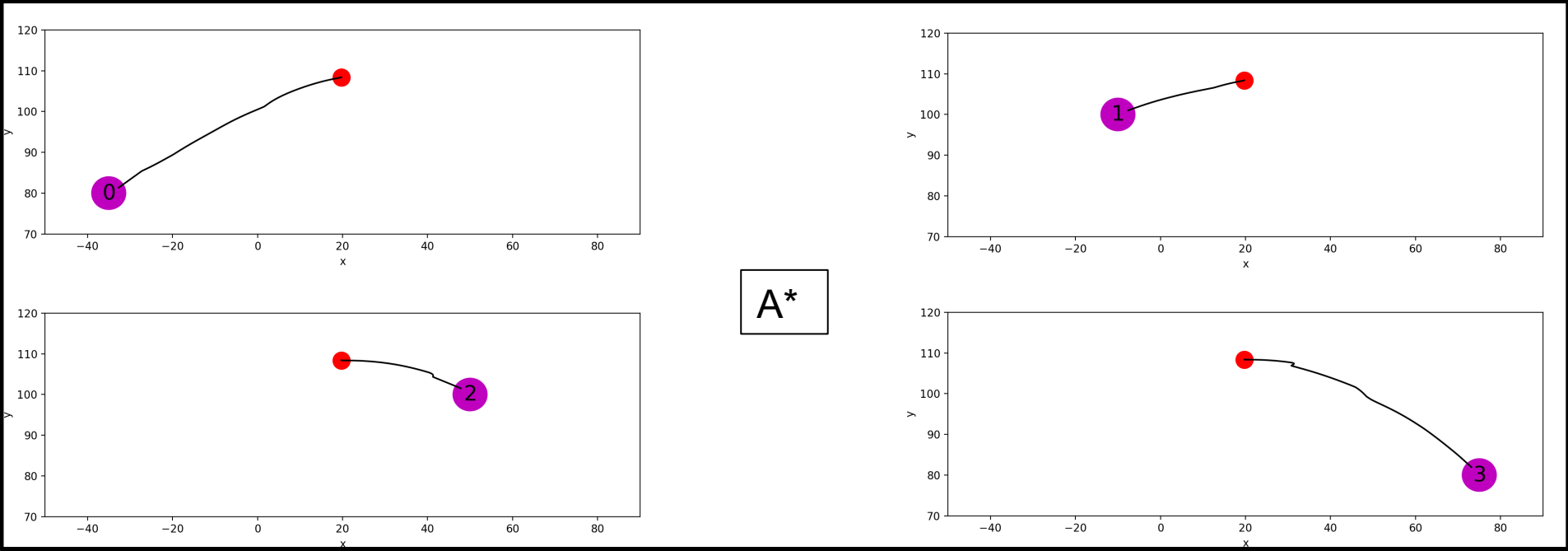


A*



Policy

Real Hand Plan



To Do List

- **Writing a ros-package for rollouts of the Real Hand.**
(Avishai's previous rollout ros-package only works on the Motoman setup)
- **Work on our new online method**

Mridul:

- Fix the issues of marker tracking
- Collect several episodes of data for testing my trained dynamics model

Real Hand

- Test whether the trained real hand dynamics model also works with Mridul's new data or not
- Do rollouts for A* and PPO policy on real hand

