Meeting
07/30/2020

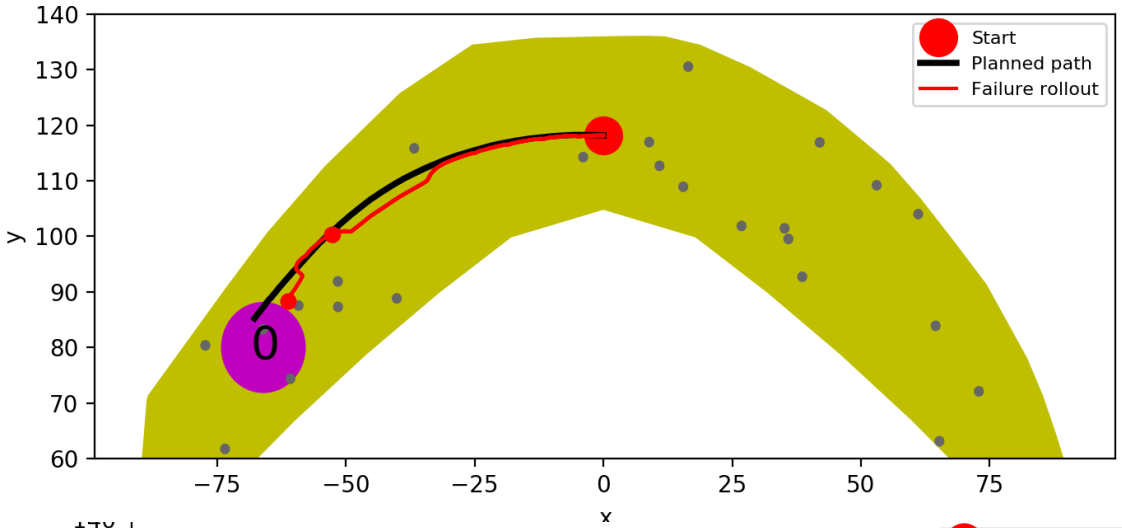
Shuo Zhang

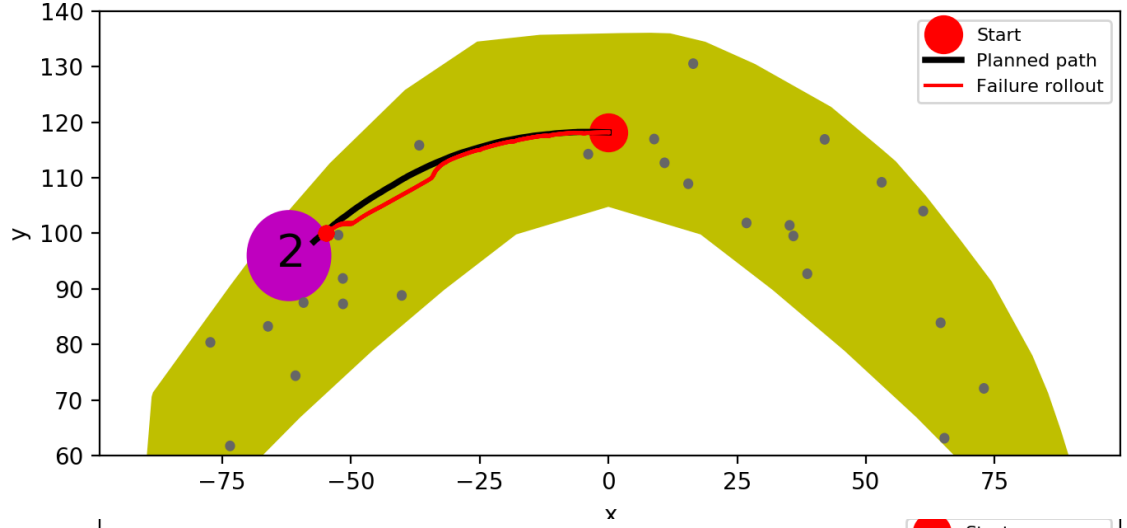
In past week

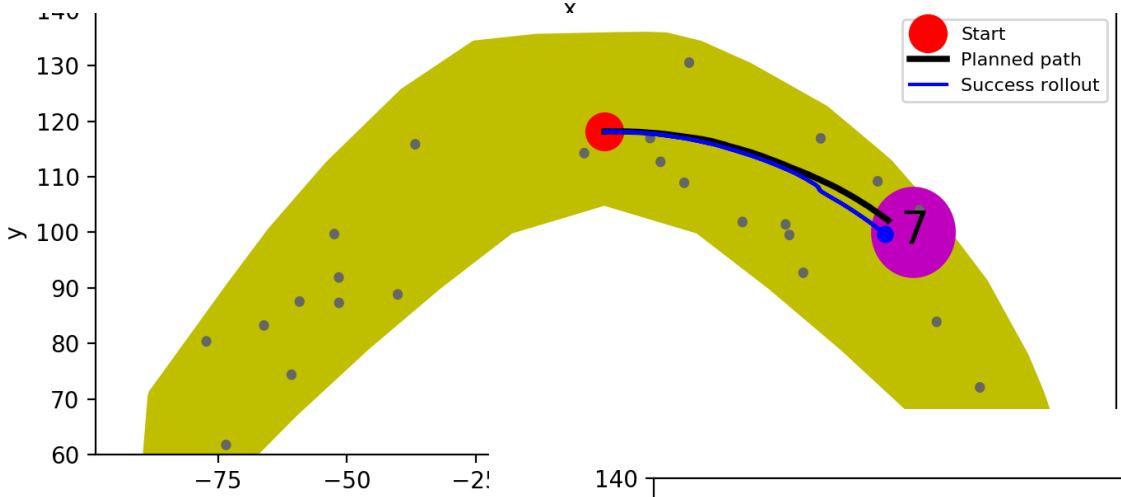
1) Data efficiency for Gazebo Hand (all 5 goal locations, except horseshoe)
2) Data efficiency for Reacher (all 3 goal locations)

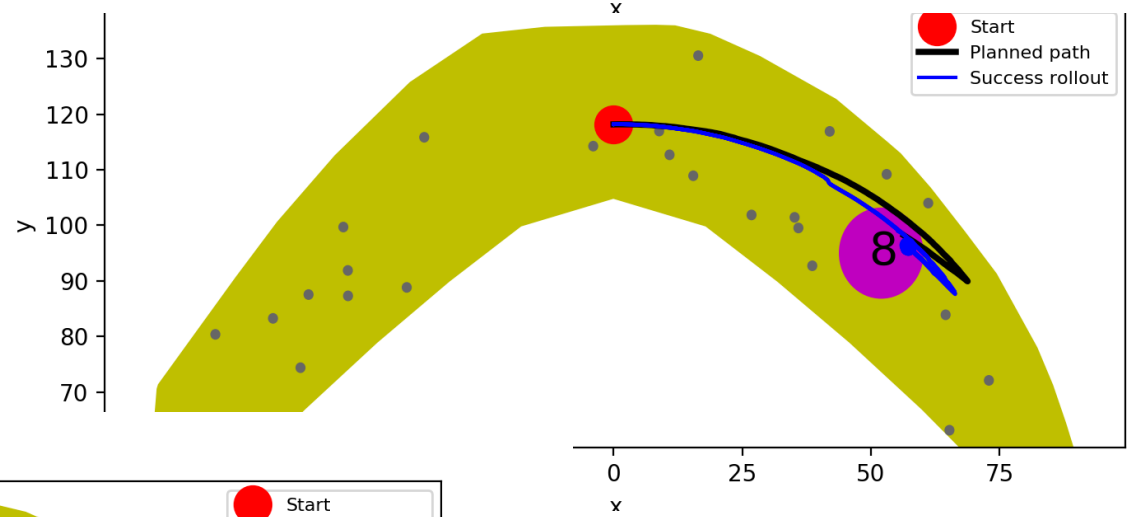
Gazebo Hand “Goal Reach Rate” (All Goal Locations)

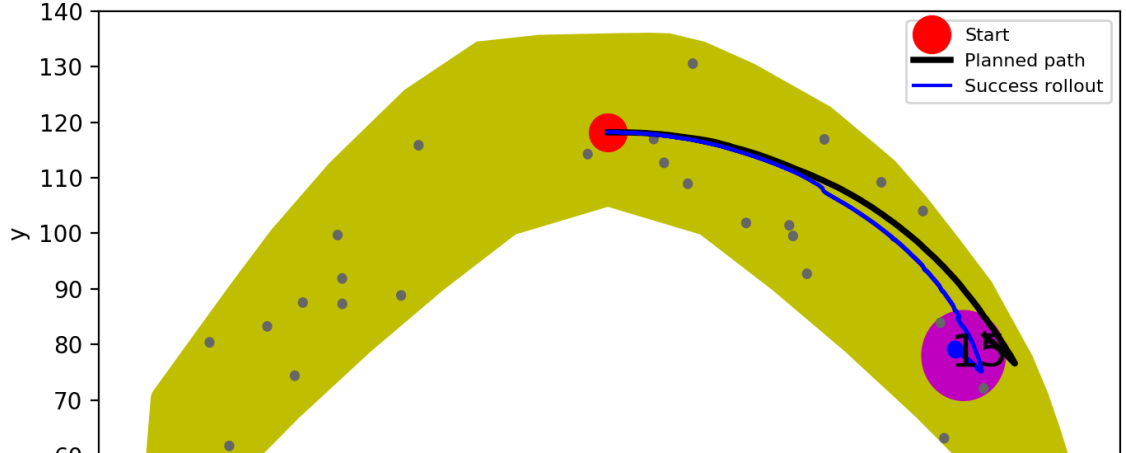
Percentage of Data	Goal Location 0	Goal Location 2	Goal Location 7	Goal Location 8	Goal Location 15	Average
1% (16k)	0	0	100	100	100	60
0.5% (8k)	0	100	0	0	0	20
0.1% (1.6k)	0	100	100	0	0	40


Start
Planned path
Failure rollout
0
x
y

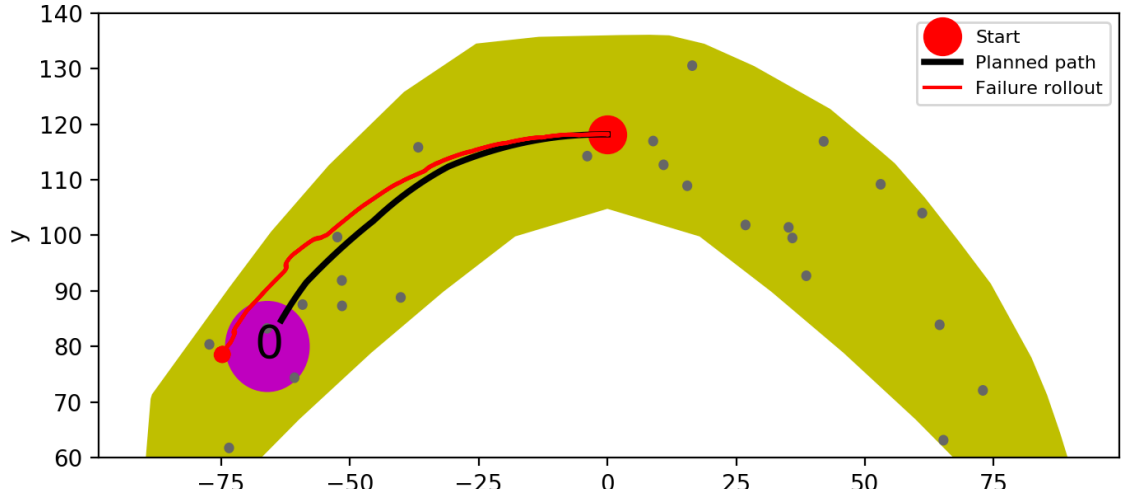

Start
Planned path
Failure rollout
2
x
y

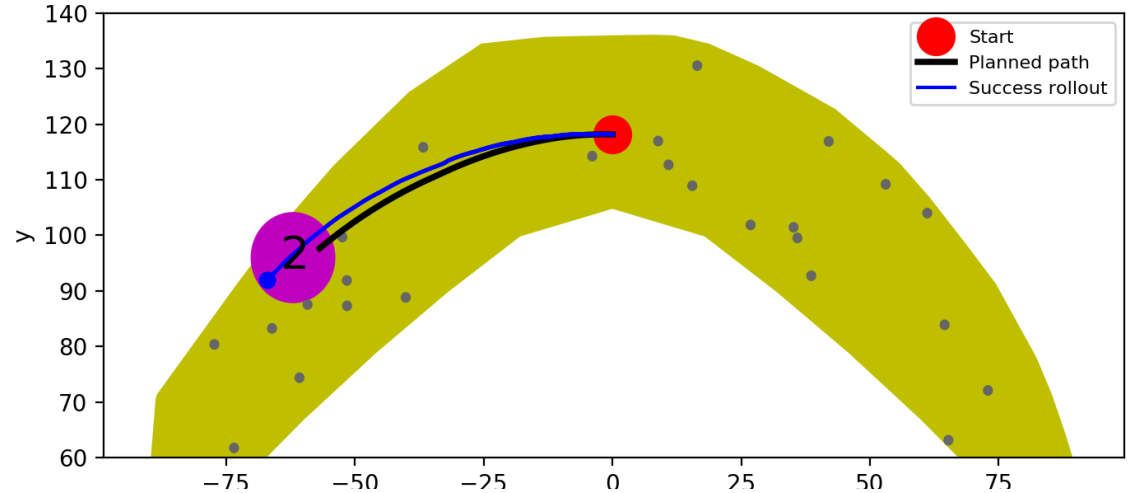

Start
Planned path
Success rollout
7
y

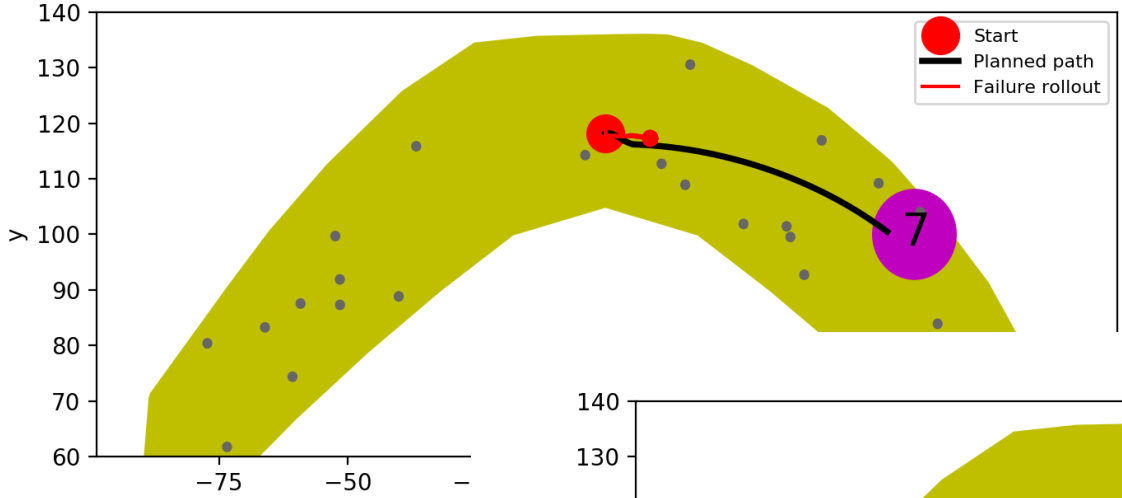

Start
Planned path
Success rollout
8
x
y

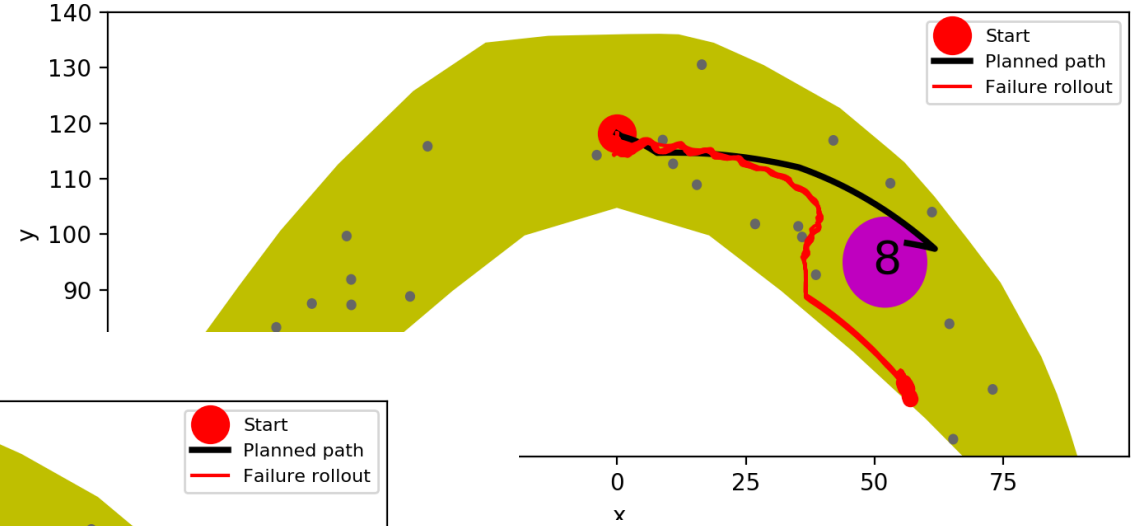

Start
Planned path
Success rollout
15
y

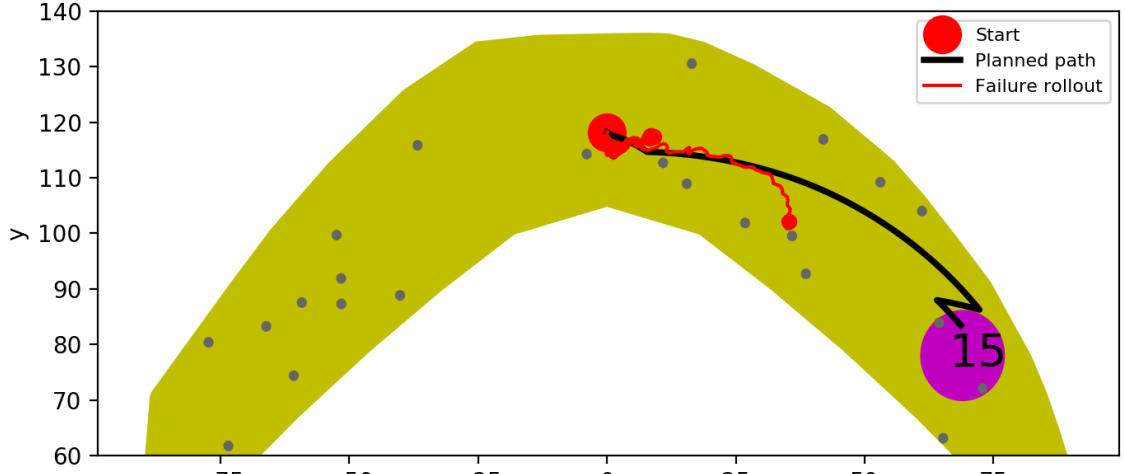
1%


Start
Planned path
Failure rollout
0
y

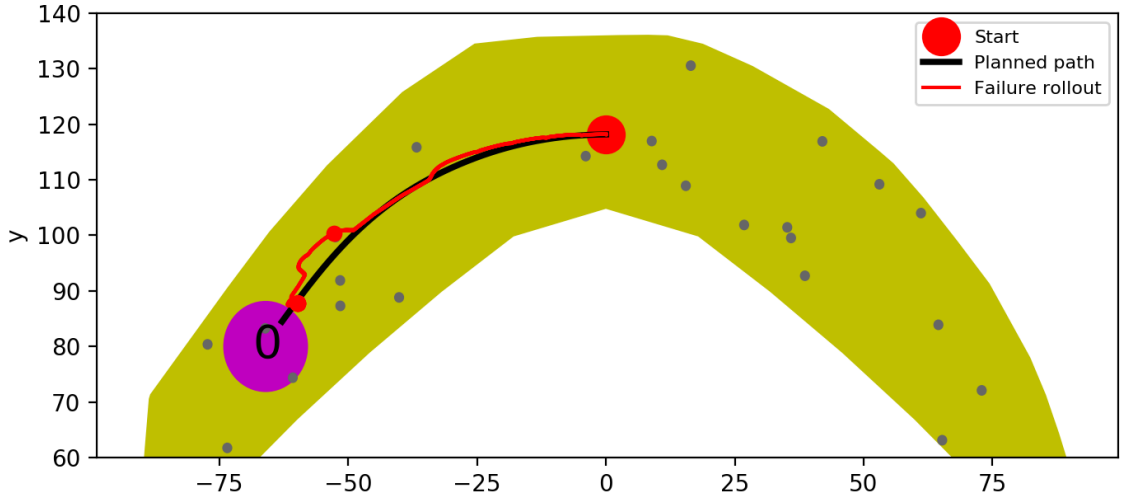

Start
Planned path
Success rollout
2
y

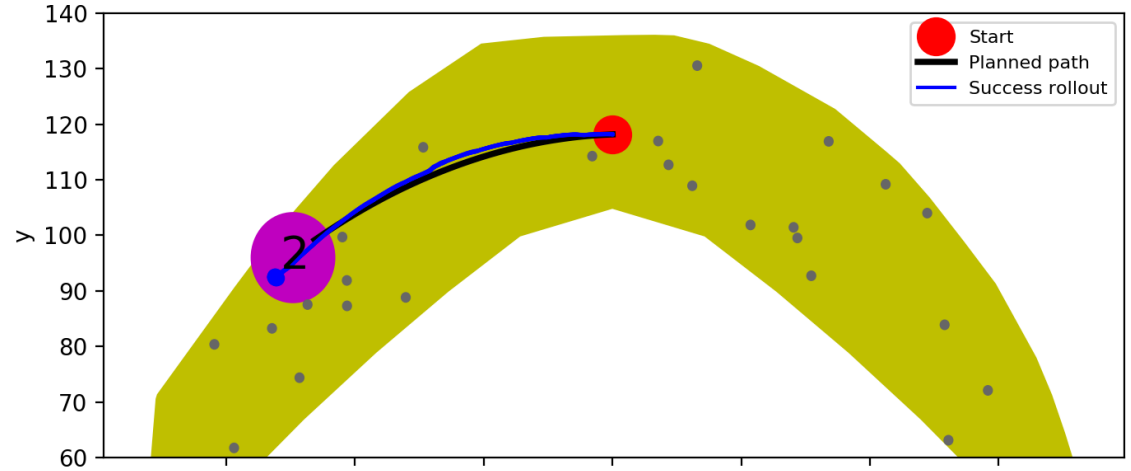

Start
Planned path
Failure rollout
7
y

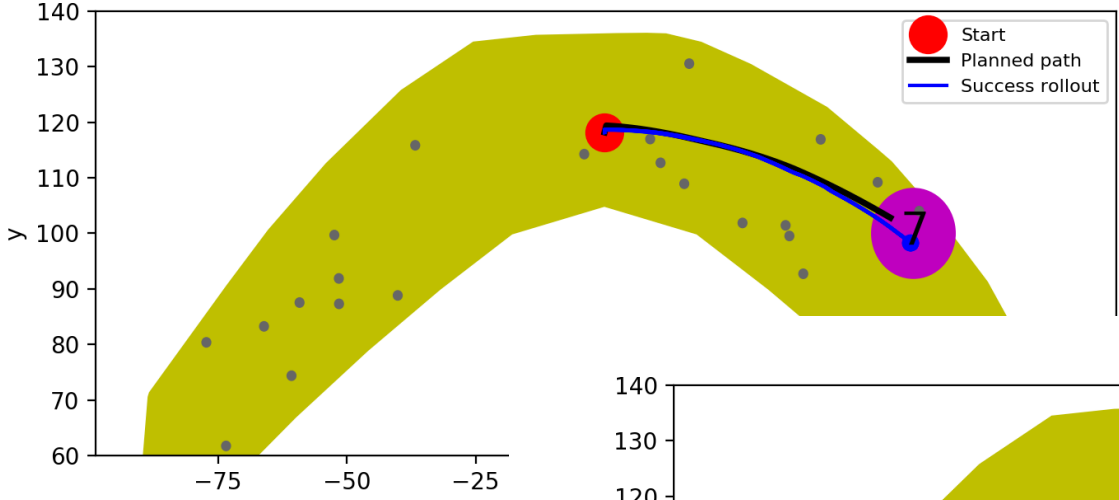

Start
Planned path
Failure rollout
8
y
x

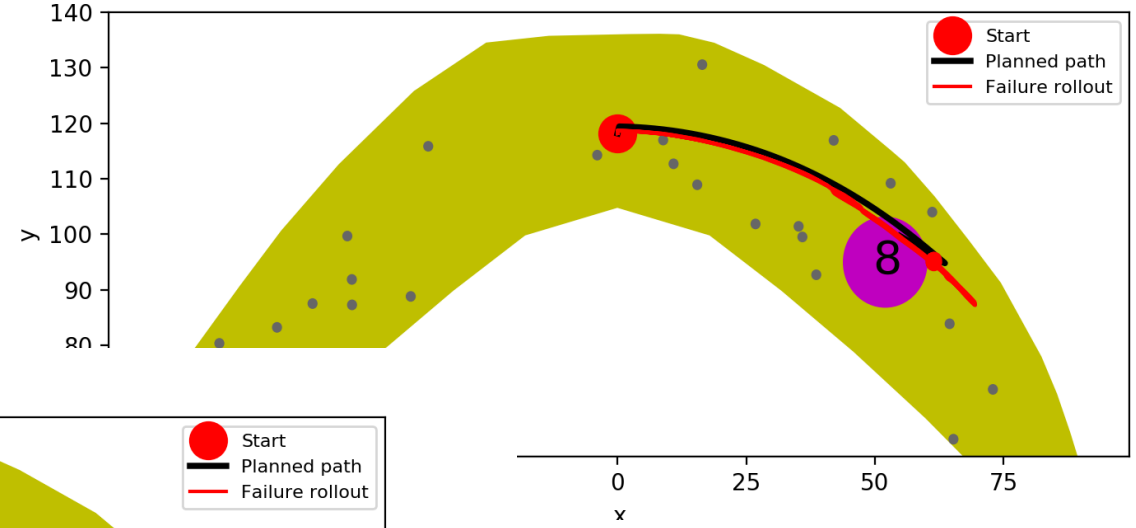

Start
Planned path
Failure rollout
15
y

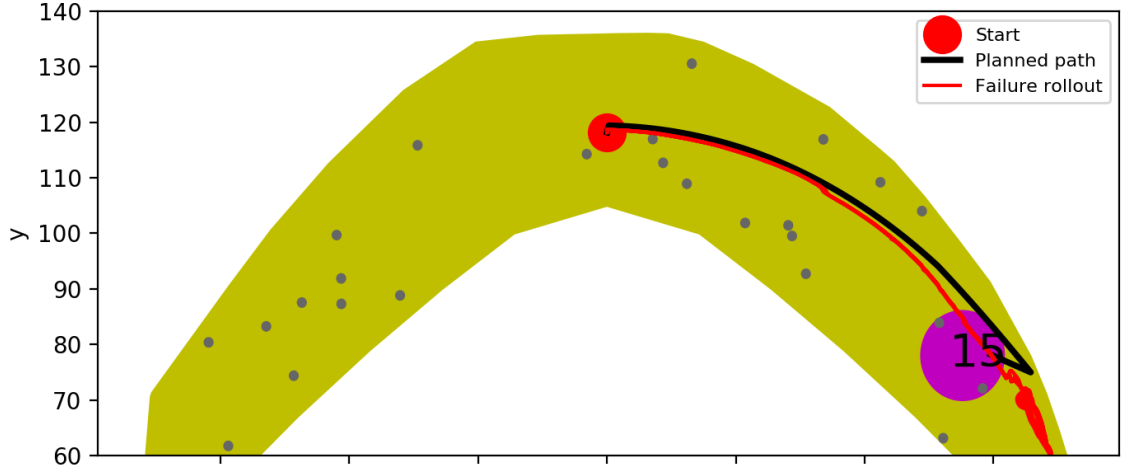
0.5%


Start
Planned path
Failure rollout
0
y
x


Start
Planned path
Success rollout
2
y


Start
Planned path
Success rollout
7
y


Start
Planned path
Failure rollout
8
y
x


Start
Planned path
Failure rollout
15
y

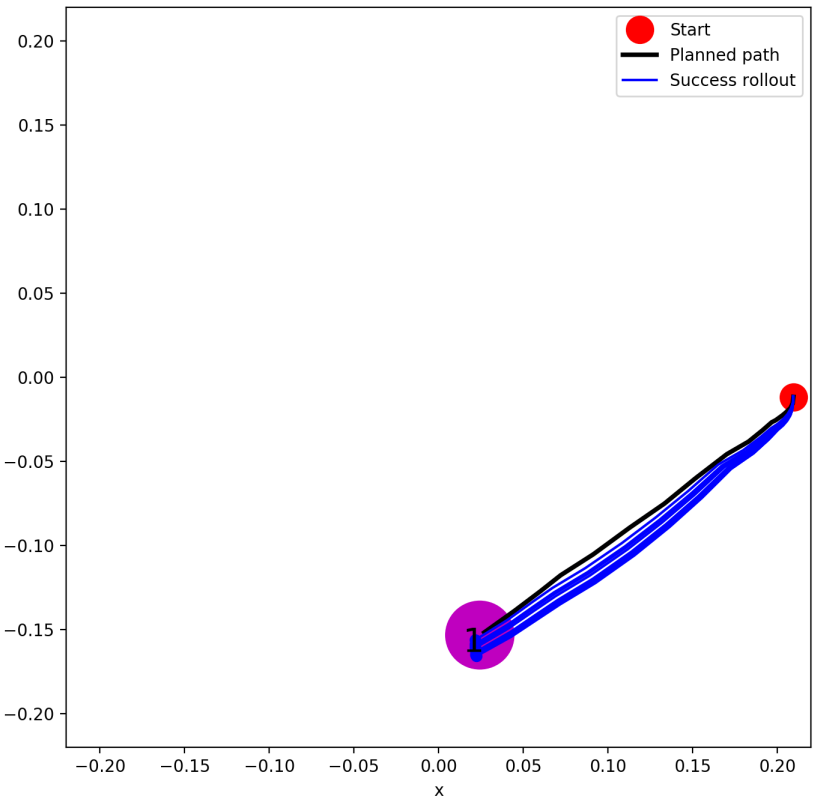
0.1%

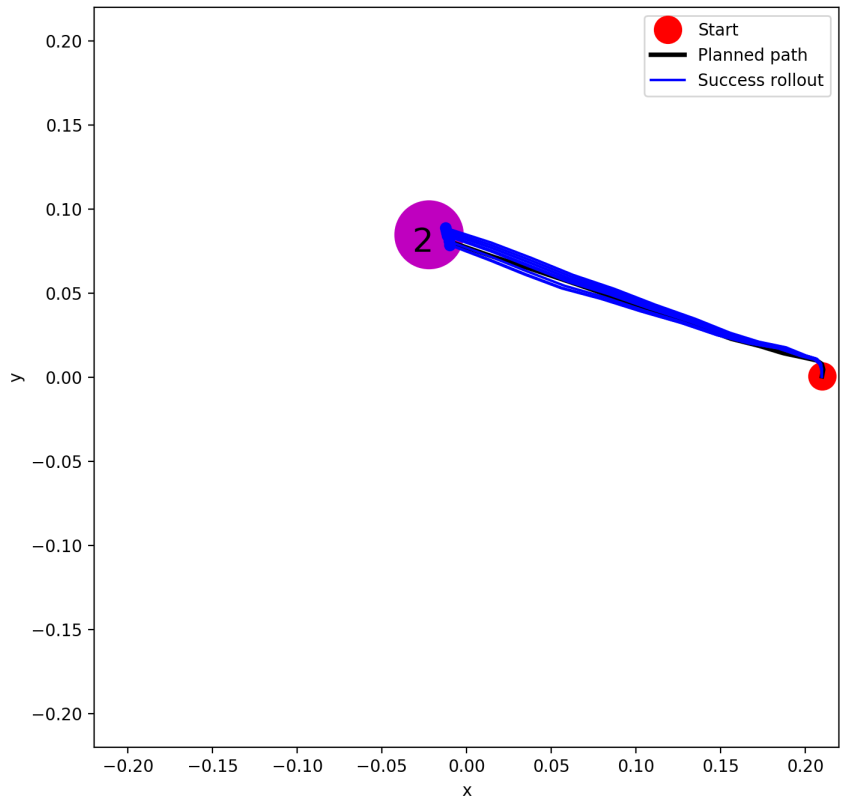
Reacher “Goal Reach Rate” (All Goal Locations)

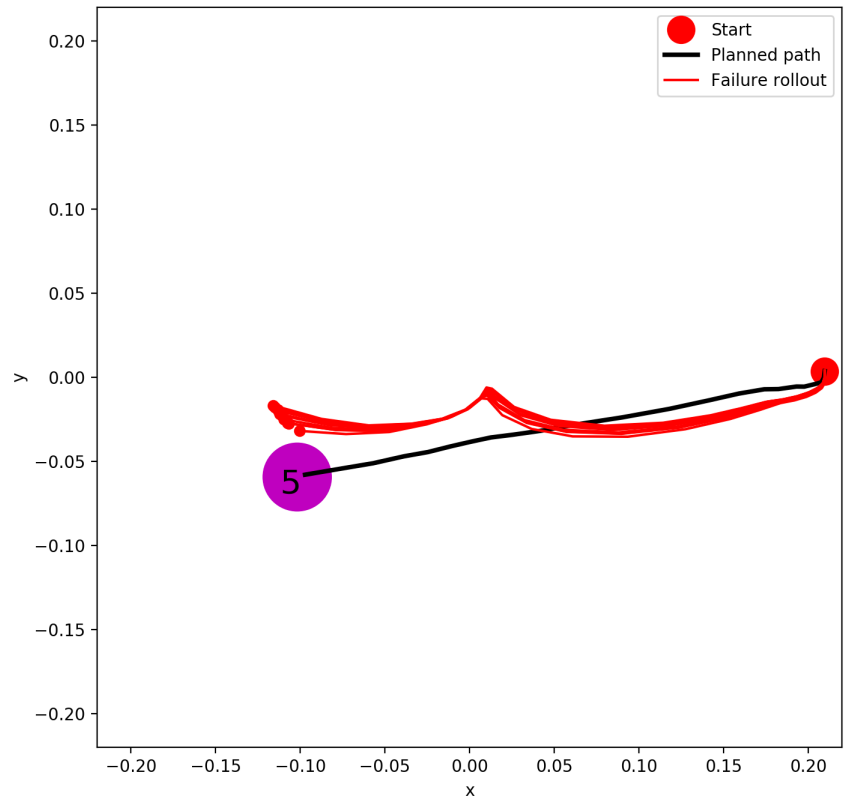
All models are trained with 50 epochs, except that 100 epochs are trained for 0.1% datasize, because 50 epochs training for 0.1% datasize did not find a path for goal location 5 within 3 hours.

Percentage of Data	Goal Location 1	Goal Location 2	Goal Location 5	Average
100% (1M)	100%	100%	100%	100%
50%	100%	100%	0%	67%
40%	100%	0%	80%	60%
30%	0%	100%	0%	33%
20%	100%	0%	0%	33%
10%	100%	70%	50%	73%
5%	0%	100%	50%	50%
1% (16k)	100%	100%	0%	67%
0.5% (8k)	0%	70%	0%	23%
0.1% (1.6k) (100 Epochs are trained)	0%	100%	0%	33%

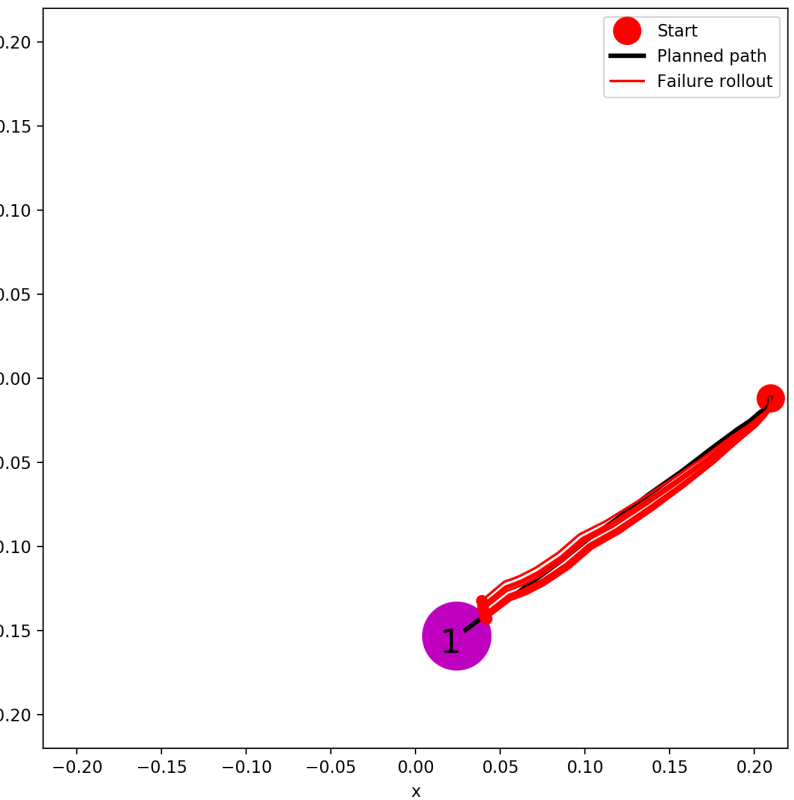
1%

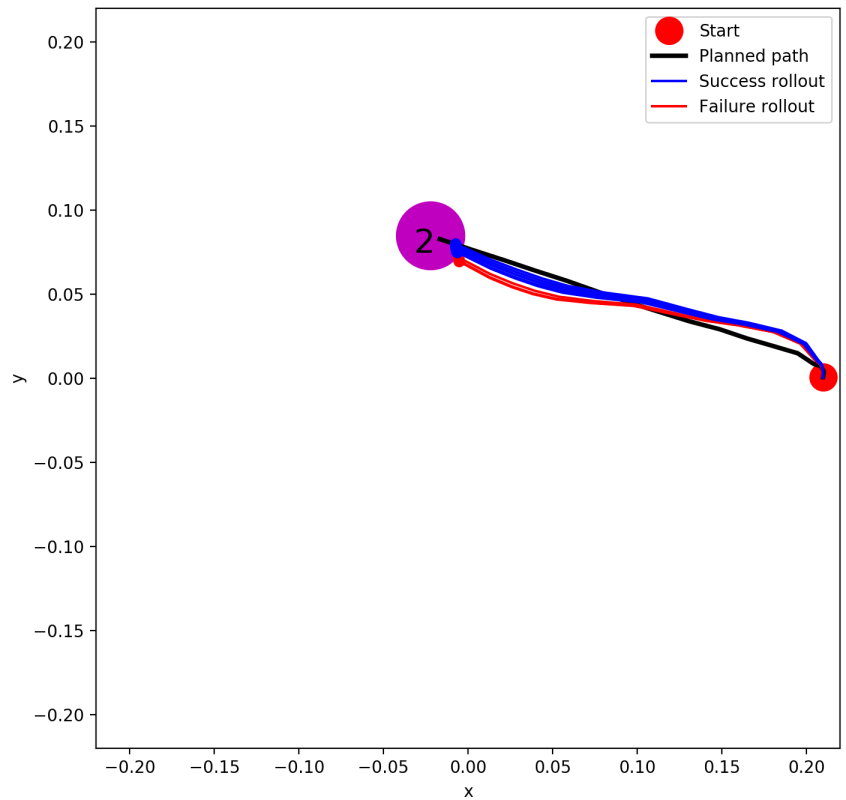

Start
Planned path
Success rollout
1
x

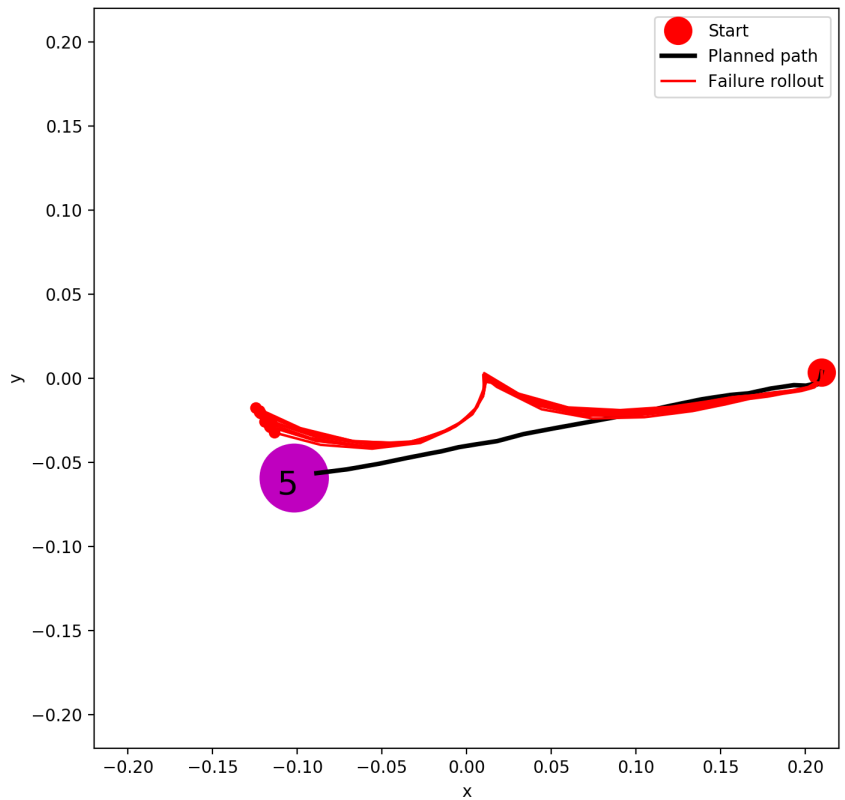

Start
Planned path
Success rollout
2
y
x


Start
Planned path
Failure rollout
5
y
x

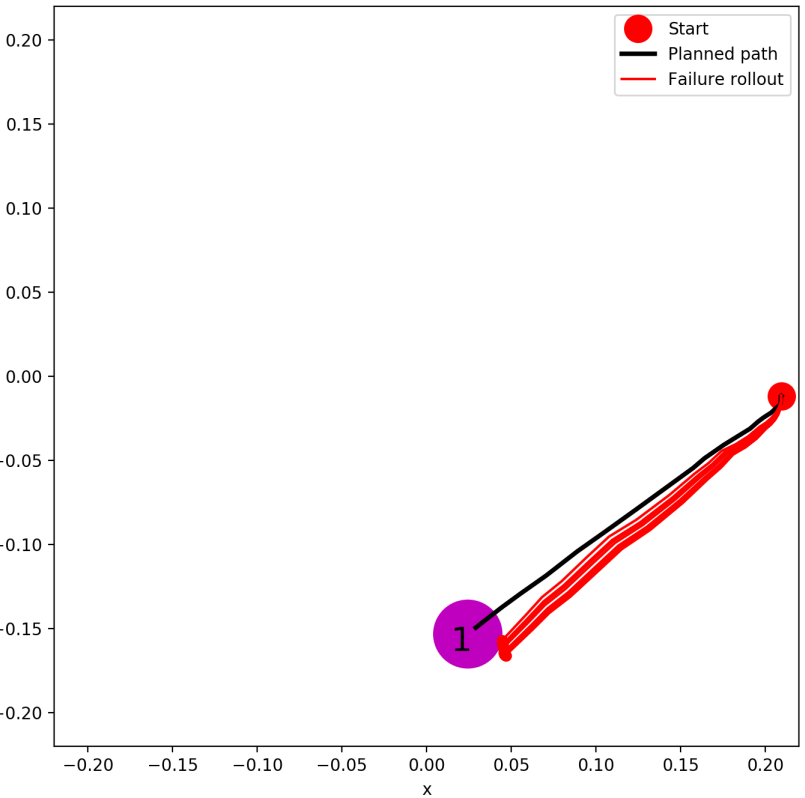
0.5%

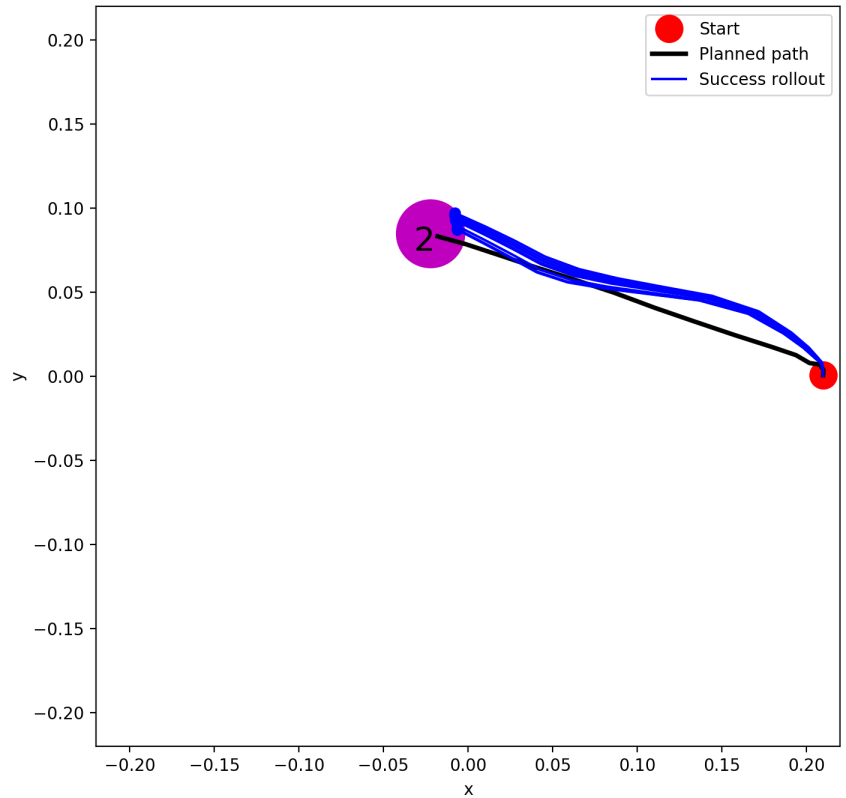

Start
Planned path
Failure rollout
1
x

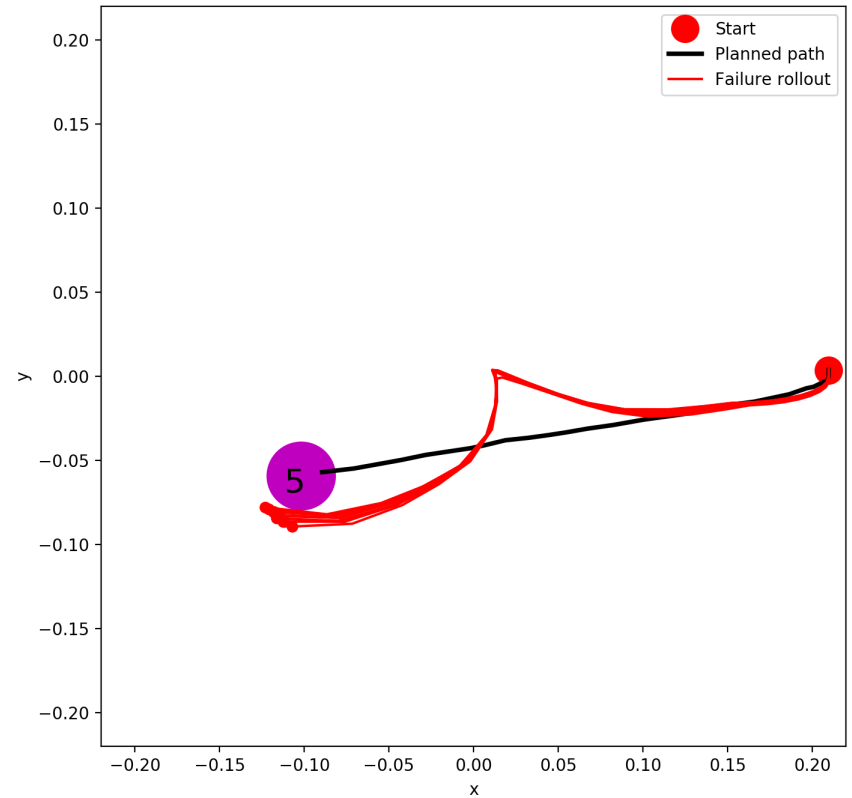

Start
Planned path
Success rollout
Failure rollout
2
y
x


Start
Planned path
Failure rollout
5
y
x

0.1%


Start
Planned path
Failure rollout
1
x


Start
Planned path
Success rollout
2
y
x


Start
Planned path
Failure rollout
5
y
x

To Do List and Questions

Possible two options for the input of our AIP
- AIP (based on A*)
- AIP (based on PPO)

Datasize for Neural Network Model	A*	PPO from model + Offline planning + Rollout	PPO from model + Online rollout	Online vanilla PPO + Rollout	AIP (based on A*) + Rollout
100%	Done	Done	Missing? Not necessary?	Missing? Not necessary?	Missing
?% (Which model to use?) (0.5% or 0.1% or ?)	Done	Missing? Not necessary?	Missing? Not necessary?	Missing? Not necessary?	Missing