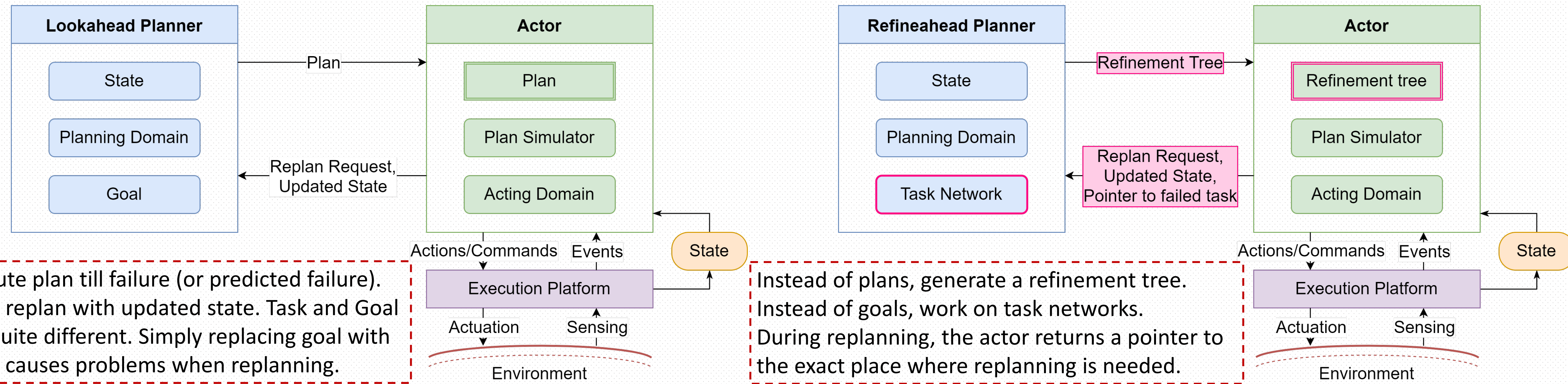


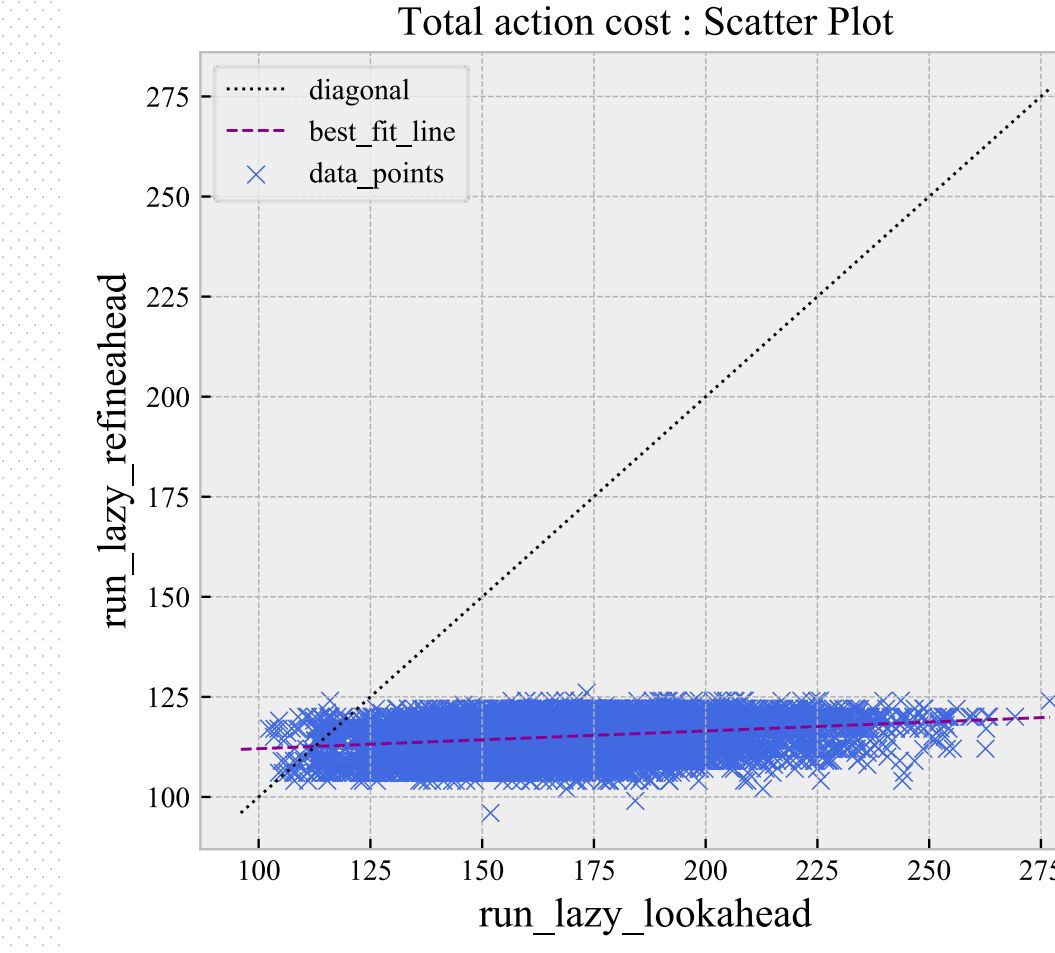
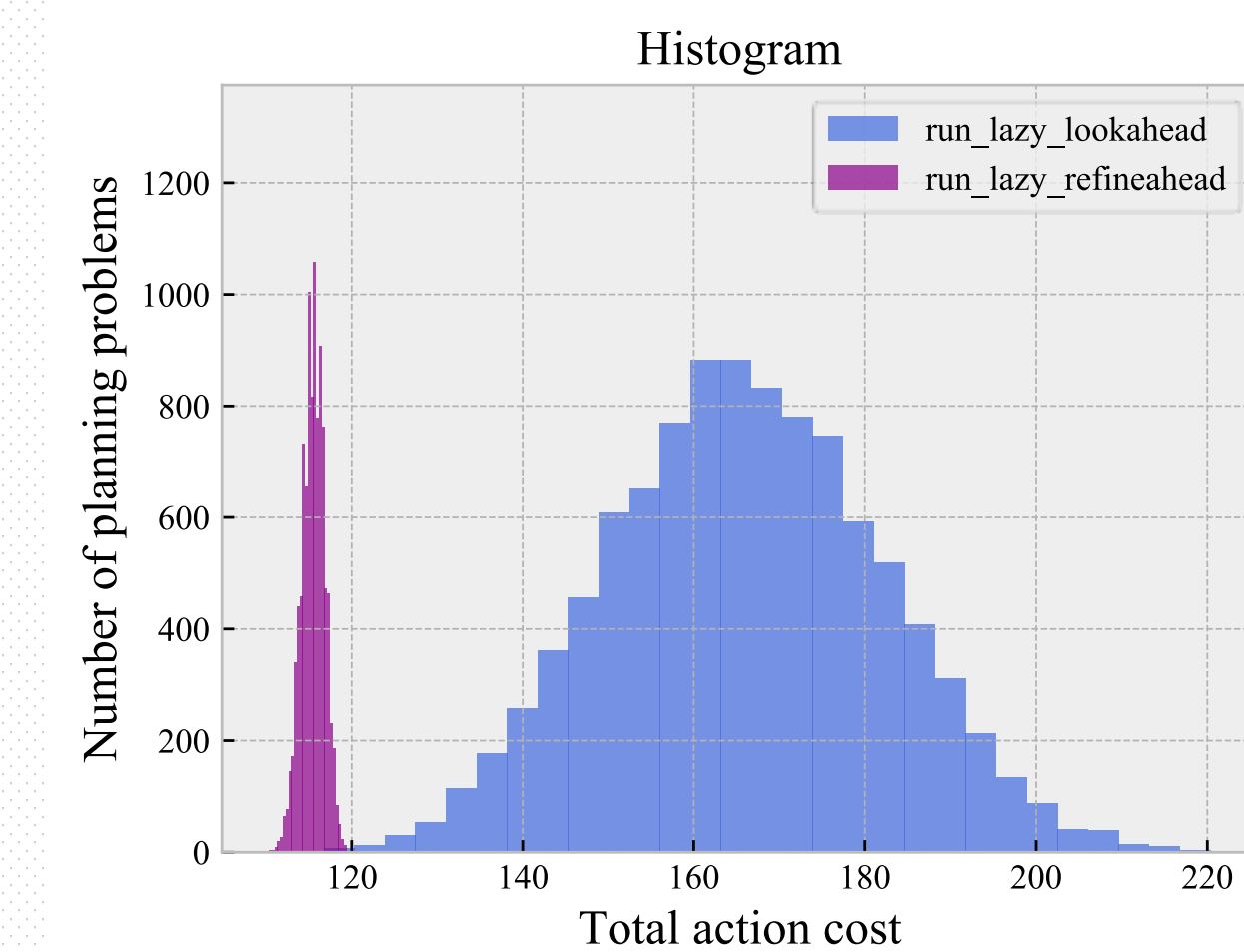
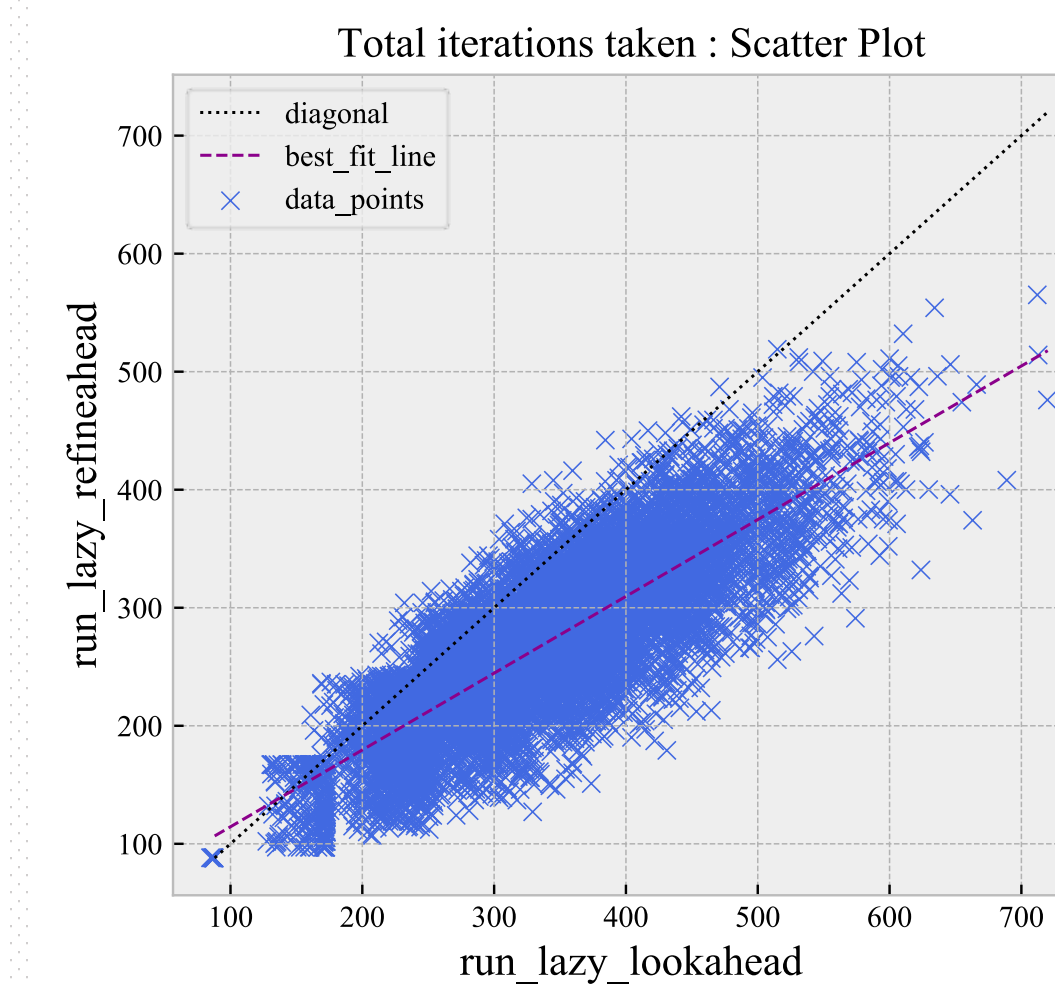
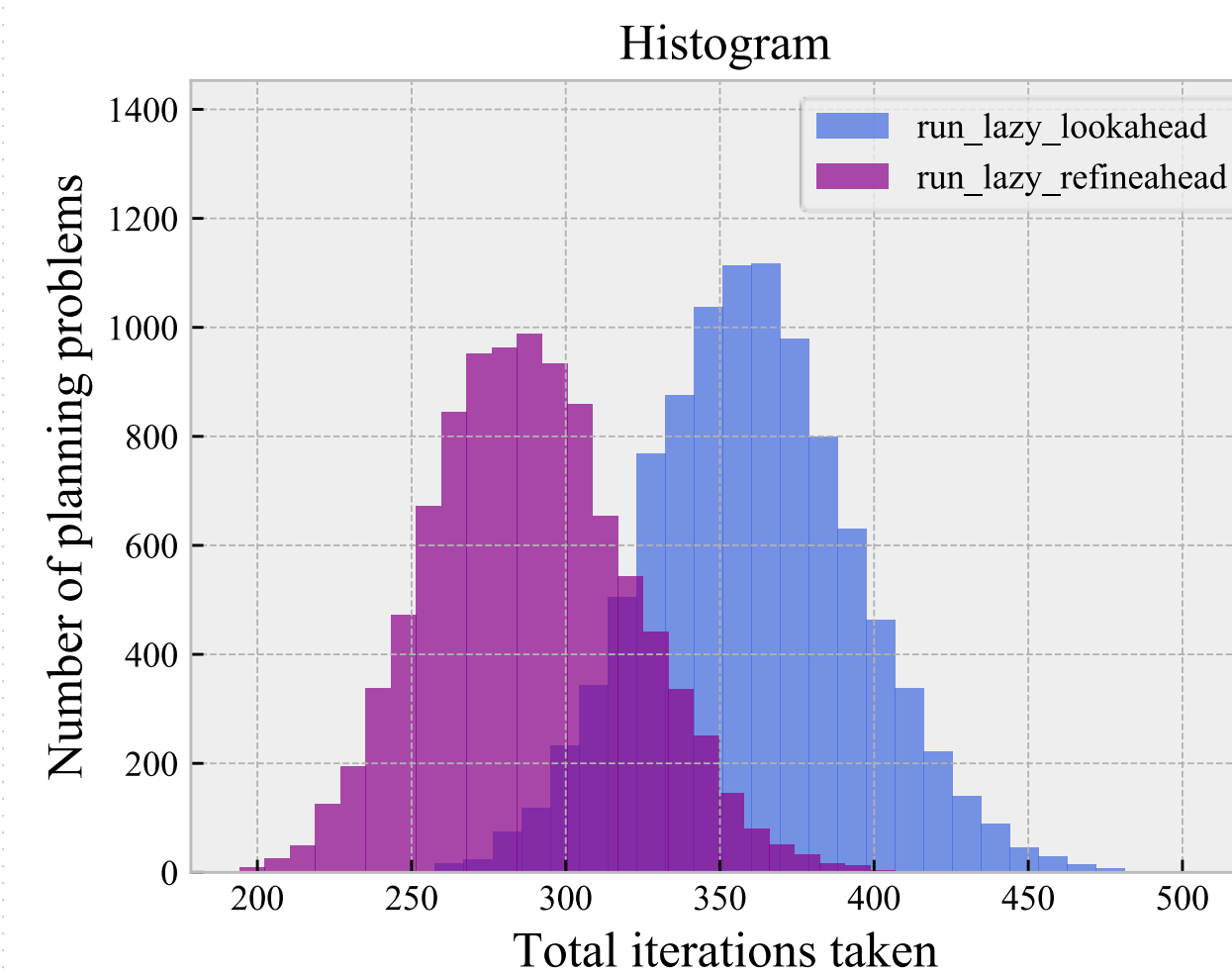
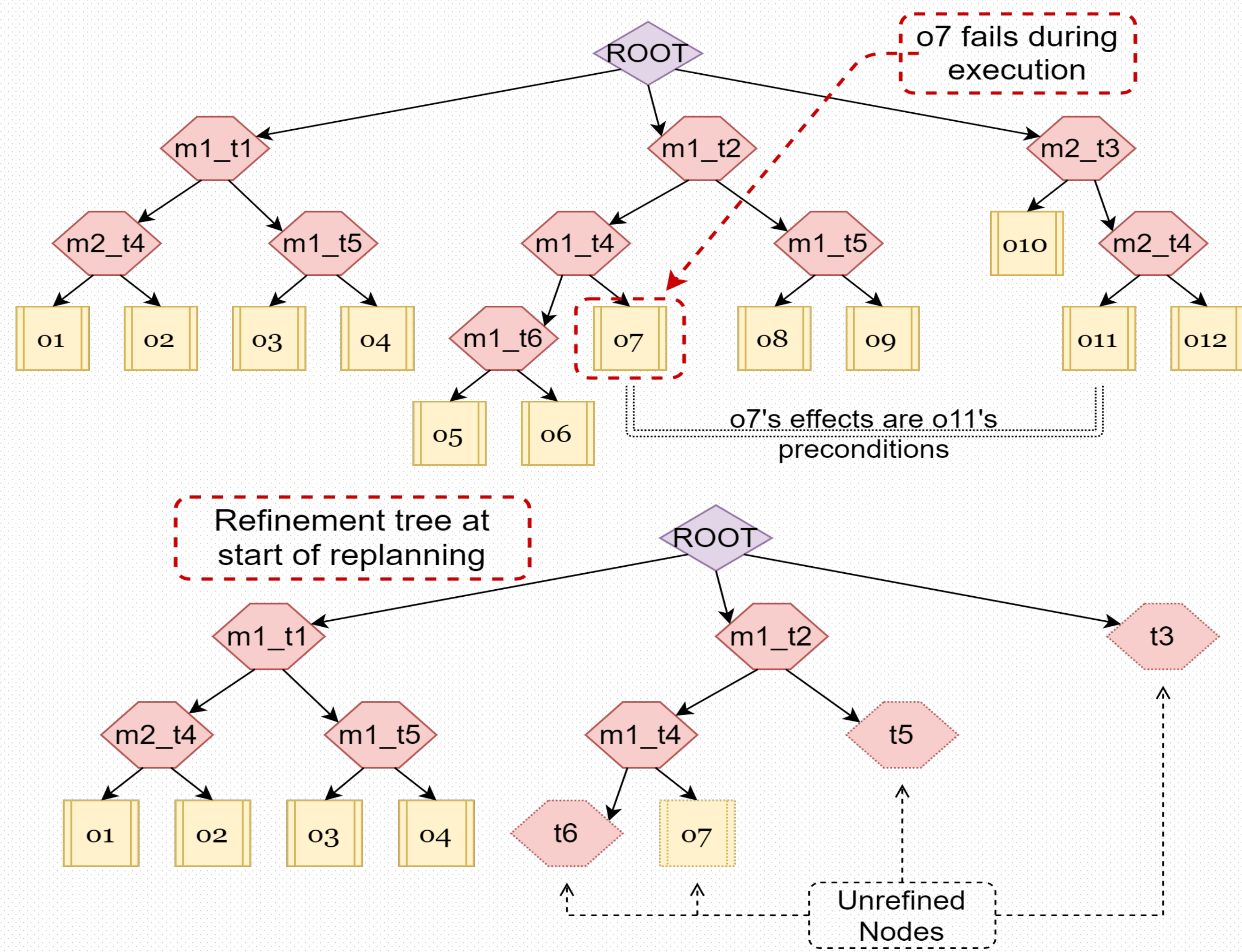
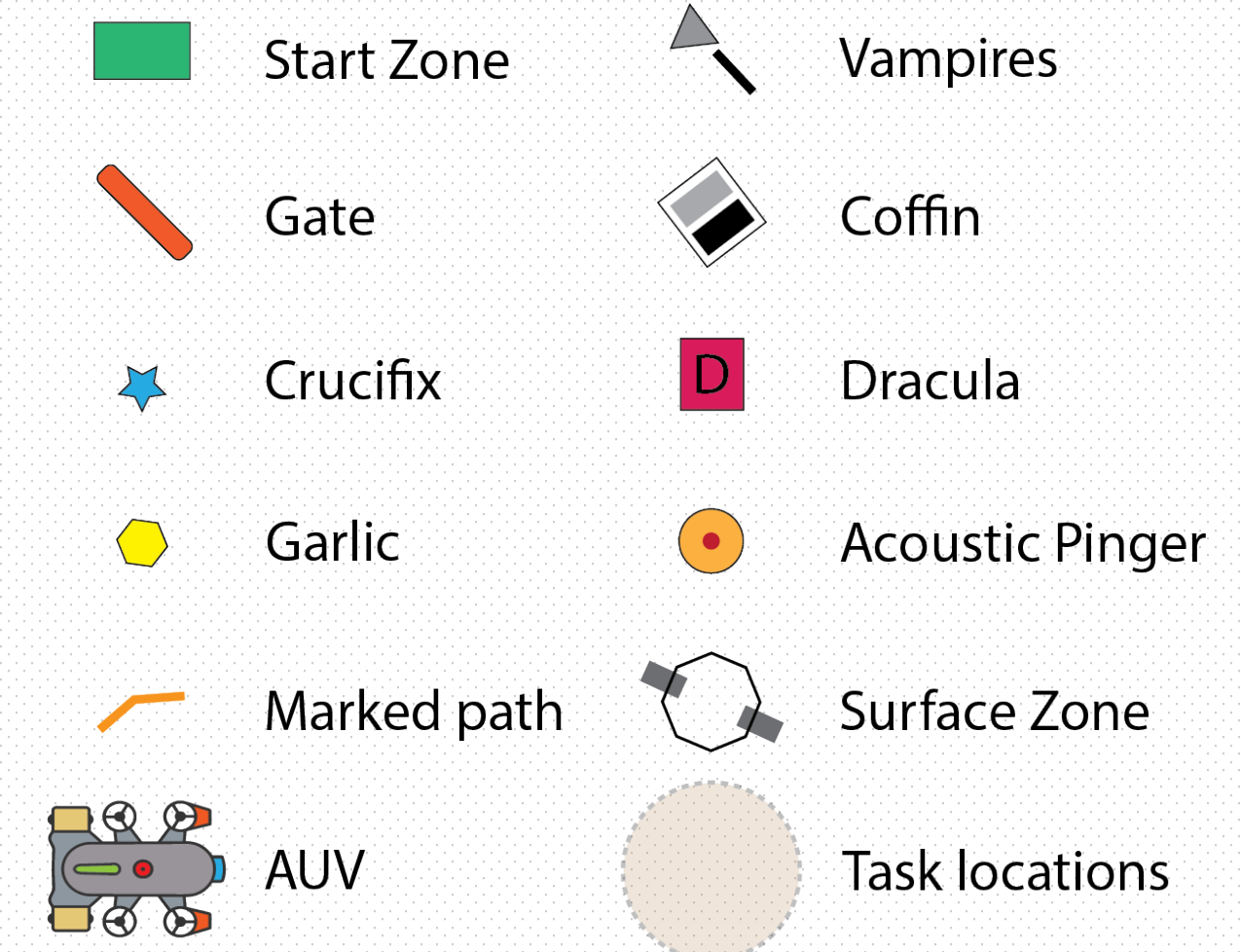
Integrating Planning and Acting With a Re-Entrant HTN Planner

Yash Bansod¹(yashb@umd.edu), Dana Nau¹(nau@umd.edu), Sunandita Patra¹(patras@umd.edu), Mak Roberts²(mak.Roberts@nrl.navy.mil)

¹ University of Maryland, College Park, USA, ² Naval Research Laboratory, Washington D.C., USA.



Domain model inspired from Robosub 2019 challenge.



Metric	Run-Lazy-Lookahead		Run-Lazy-Refineahead	
	Mean	SD	Mean	SD
Total iterations taken	364.470	34.178	290.592	32.639
Total action cost	165.928	16.002	115.478	1.339
Final State Reward	74.368	3.183	74.326	3.242

Table 1: Overview of results obtained using D_{mean_exp}

Metric	Refineahead / Lookahead Mean	Best-fit line	
		Slope	Y-intercept
Total iterations taken	0.796	0.639	58.296
Total action cost	0.682	0.044	108.282
Final State Reward	1.049	0.805	14.540

Table 2: Overview of results obtained using D_{eqv}

- Run-Lazy-Refineahead is ~20% computationally faster than Run-Lazy-Lookahead.
- Run-Lazy-Refineahead produces ~30% cheaper execution sequences than Run-Lazy-Lookahead.