**Towards Search Node-Specific Special-Case Heuristics for HTN Planning** 

An Empirical Analysis of Search Space Properties under Progression



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Hierarchical Task Network Planning



			Empirical results															<ul> <li>Simple test: Without recomputing TDG</li> <li>Reachable test: Recomputing TDG</li> </ul>																
Domain		Simple				Simple		Deschable		Simulo						Simple			A Cyclic			Simple						Simple		<u>гши</u>	December 1			
		Simple				Simple		Keachable		Simple		e			Simple		-				Simple		e				Simple		e .	Keacnab				
		$\downarrow \uparrow$	$\mu$	$\downarrow$	$\uparrow$	$\mu$	$\downarrow$ $\uparrow$	$\mu$	$\downarrow$	$\uparrow$	$\mu$	$\downarrow$	$\uparrow$	$\mu$	$\downarrow$	$\uparrow$	$\mu$	$\downarrow$	$\uparrow$	$\mu$	$\downarrow$	$\uparrow$	$\mu$	$\downarrow$	$\uparrow$	$\mu$	$\downarrow$	$\uparrow$	$\mu$	$\downarrow$	$\uparrow$	$\mu$	$\downarrow$	$\uparrow$
Assembly	(30)	0 0	0	0	0	0	82 ~A	97	82	$\sim A$	97	0	0	0	0	~0	~0	0	7	2	0	2	~0	0	9	~0	~0	9	2	~0	9	1	~0	9
Barman-BDI	(15)	0 0	0	0	0	0	0 0	0	0	0	0	96	$\sim A$	$\sim A$	96	$\sim A$	$\sim A$	0	0	0	0	0	0	~0	2	~0	~0	2	~0	~0	2	$\sim 0$	~0	2
BlockswGTOHP	(29)	$0 \sim A$	94	0	$\sim A$	93	0 0	0	0	0	0	0	99	5	0	99	6	0	0	0	0	0	0	0	3	$\sim 0$	0	3	$\sim 0$	$\sim 0$	5	1	$\sim 0$	5
BlockswHPDDL	(28)	0 0	0	0	0	0	98 ~A	$\sim A$	96	$\sim A$	$\sim A$	0	0	0	0	$\sim 0$	$\sim 0$	0	0	0	0	0	0	0	0	0	$\sim 0$	2	$\sim 0$	$\sim 0$	2	$\sim 0$	$\sim 0$	2
Depots	(22)	$0 \sim A$	35	0	$\sim A$	32	0 0	0	0	24	1	0	$\sim A$	63	$\sim 0$	${\sim}A$	65	0	0	0	0	0	0	0	0	0	0	0	0	$\sim 0$	8	2	$\sim 0$	8
Factories	(8)	0 0	0	0	0	0	96 ~A	. 99	96	$\sim A$	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$\sim 0$	4	1	$\sim 0$	4
Hiking	(24)	87 97	92	87	97	92	3 12	, 7	3	10	7	0	0	0	$\sim 0$	1	1	0	0	0	0	0	0	0	0	0	0	0	0	$\sim 0$	1	1	$\sim 0$	1
Lamps	(16)	0 0	0	0	0	0	$80 \sim A$	95	80	$\sim A$	95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$\sim 0$	20	5	$\sim 0$	20
Logistics-Learned	(44)	0 0	0	0	0	0	98 ~A	$\sim A$	98	$\sim A$	$\sim A$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$\sim 0$	2	$\sim 0$	$\sim 0$	2
Minecraft Pl.	(1)	0 0	0	0	0	0	84 84	84	84	84	84	15	15	15	15	15	15	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1
Minecraft Reg.	(42)	0 0	0	0	0	0	0 0	0	0	0	0	97	${\sim}A$	99	97	$\sim A$	99	0	0	0	0	0	0	~0	1	$\sim 0$	$\sim 0$	1	$\sim 0$	$\sim 0$	1	$\sim 0$	$\sim 0$	1
Monroe FO	(17)	74 ~ $A$	95	74	$\sim A$	95	0 0	0	0	0	0	0	17	2	0	17	2	0	0	0	0	0	0	0	4	$\sim\!0$	0	4	$\sim 0$	$\sim 0$	14	3	$\sim 0$	14
Monroe PO	(8)	$25 \sim A$	80	25	$\sim A$	80	0 0	0	0	0	0	0	58	14	0	58	14	0	0	0	0	0	0	0	8	2	0	8	2	$\sim 0$	11	5	$\sim 0$	11
Multiarm-Blocksw	(74)	0 0	0	0	0	0	98 ~A	$\sim A$	6	96	50	0	0	0	0	94	<b>48</b>	0	0	0	0	0	0	0	0	0	$\sim 0$	60	2	$\sim 0$	2	$\sim 0$	$\sim 0$	2
Robot	(20)	0 0	0	0	0	0	$67 \sim A$	. 97	4	83	31	0	0	0	0	$\sim 0$	$\sim 0$	0	0	0	0	0	0	0	0	0	0	96	67	$\sim 0$	33	3	$\sim 0$	33
Rover	(21)	$0 \sim A$	89	0	$\sim A$	88	0 0	0	0	0	0	0	97	10	$\sim 0$	97	10	0	0	0	0	0	0	0	0	0	0	0	0	$\sim 0$	7	2	$\sim 0$	7
Satellite	(19)	83 99	95	83	99	95	0 0	0	0	0	0	$\sim 0$	8	2	$\sim 0$	8	2	0	0	0	0	0	0	0	5	1	0	5	1	$\sim 0$	8	2	$\sim 0$	8
SharpSAT	(10)	0 0	0	0	0	0	0 0	0	0	0	0	98	${\sim}A$	99	98	$\sim A$	99	0	0	0	0	0	0	0	0	0	0	0	0	$\sim 0$	2	1	$\sim 0$	2
Snake	(2)	0 0	0	0	0	0	$\sim A \sim A$	~A	99	$\sim A$	$\sim A$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$\sim 0$	$\sim 0$	$\sim 0$	$\sim 0$	$\sim 0$	$\sim 0$	$\sim 0$	$\sim 0$
Towers	(13)	0 0	0	0	0	0	$75 \sim A$	. 97	75	$\sim A$	97	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$\sim 0$	25	3	$\sim 0$	25
Transport	(25)	88 ~ $A$	97	88	$\sim A$	97	0 0	0	0	0	0	0	2	$\sim 0$	0	2	$\sim 0$	0	0	0	0	0	0	0	5	1	0	5	1	$\sim 0$	12	2	$\sim 0$	12
Woodworking	(19)	0 0	0	0	0	0	0 0	0	0	0	0	0	${\sim}A$	85	0	${\sim}A$	85	0	0	0	0	0	0	0	75	8	0	75	8	$\sim 0$	25	6	$\sim 0$	25