

Table 1: RQ3: supplement. Each cell (except the last row) reports the mean±standard deviation of the satisfaction (Scott-Knott ESD rank). A green cell denotes the best ranked tuner for a case.

d%	System	$p_{1,1}$				$p_{1,2}$				$p_{1,3}$			
		GA_p	CoTune0	CoTune1	CoTune2	GA_p	CoTune0	CoTune1	CoTune2	GA_p	CoTune0	CoTune1	CoTune2
0.1%	$7z$	.10±.25 (2)	.50±.40 (1)	.10±.25 (2)	.15±.30 (2)	.09±.27 (3)	.52±.42 (1)	.24±.36 (2)	.14±.31 (3)	.08±.26 (2)	.34±.39 (1)	.06±.19 (2)	.02±.07 (3)
	Kanzi	.00±.00 (1)	.00±.00 (1)	.00±.00 (1)	.00±.00 (1)	.00±.00 (1)	.00±.00 (1)	.00±.00 (1)	.00±.00 (1)	.02±.10 (1)	.00±.00 (2)	.00±.00 (2)	.00±.00 (2)
	ExaStencils	.00±.00 (3)	.90±.30 (1)	.03±.18 (2)	.03±.18 (2)	.03±.18 (2)	.86±.34 (1)	.00±.00 (3)	.07±.25 (2)	.07±.25 (2)	.76±.43 (1)	.07±.25 (2)	.00±.00 (3)
	Apache	.00±.00 (1)	.00±.00 (1)	.00±.00 (1)	.00±.00 (1)	.00±.00 (1)	.00±.00 (1)	.00±.00 (1)	.00±.00 (1)	.00±.00 (1)	.00±.00 (1)	.00±.00 (1)	.00±.00 (1)
	SQLite	.00±.00 (2)	.03±.18 (1)	.00±.00 (3)	.03±.18 (1)	.03±.14 (1)	.00±.00 (2)	.00±.00 (2)	.00±.00 (2)	.00±.00 (3)	.03±.18 (1)	.02±.07 (1)	.00±.00 (2)
	DConvert	.00±.00 (1)	.00±.00 (1)	.00±.00 (1)	.00±.00 (1)	.00±.00 (1)	.00±.00 (1)	.00±.00 (1)	.00±.00 (1)	.00±.00 (1)	.00±.00 (1)	.00±.00 (1)	.00±.00 (1)
	DeepArch	.24±.39 (2)	.76±.37 (1)	.19±.36 (2)	.26±.41 (2)	.15±.31 (3)	.50±.47 (1)	.13±.31 (3)	.26±.43 (2)	.26±.41 (2)	.65±.47 (1)	.26±.40 (2)	.03±.18 (3)
	Jump3r	.00±.00 (2)	.00±.00 (1)	.00±.00 (2)	.00±.00 (2)	.00±.00 (1)	.00±.00 (1)	.00±.00 (1)	.00±.00 (1)	.00±.00 (2)	.00±.00 (2)	.00±.00 (1)	.00±.00 (2)
	HSMGP	.14±.34 (2)	.89±.28 (1)	.03±.18 (3)	.10±.30 (2)	.10±.30 (3)	.92±.22 (1)	.02±.09 (4)	.21±.40 (2)	.03±.18 (3)	.92±.25 (1)	.07±.25 (3)	.10±.30 (2)
	Average p_1 score/rank	.52/2.02	.62/1.39	.54/1.74	.55/1.44	.48/2.09	.57/1.43	.51/1.81	.52/1.57	.47/2.07	.56/1.39	.50/1.67	.50/1.63
1%	$7z$	.66±.34 (1)	.57±.38 (2)	.58±.37 (2)	.51±.40 (2)	.20±.17 (2)	.25±.17 (1)	.24±.18 (1)	.25±.17 (1)	.37±.30 (2)	.37±.30 (2)	.42±.29 (1)	.44±.25 (1)
	Kanzi	.06±.19 (2)	.19±.36 (1)	.14±.31 (1)	.07±.20 (2)	.12±.28 (2)	.08±.24 (2)	.21±.38 (1)	.01±.07 (3)	.02±.12 (3)	.17±.28 (1)	.04±.14 (3)	.10±.27 (2)
	ExaStencils	.76±.41 (2)	.98±.11 (1)	.62±.47 (3)	.59±.47 (3)	.50±.43 (3)	.77±.25 (1)	.68±.37 (2)	.58±.44 (3)	.59±.44 (3)	.91±.17 (1)	.67±.41 (2)	.51±.44 (3)
	Apache	.00±.00 (3)	.05±.14 (1)	.03±.13 (2)	.04±.12 (1)	.00±.00 (3)	.04±.15 (2)	.07±.24 (1)	.08±.22 (1)	.00±.00 (3)	.02±.09 (2)	.06±.21 (1)	.02±.09 (2)
	SQLite	.10±.24 (2)	.15±.31 (1)	.08±.22 (2)	.09±.24 (2)	.19±.34 (1)	.20±.34 (1)	.17±.29 (1)	.08±.23 (2)	.04±.13 (2)	.16±.30 (1)	.20±.32 (1)	.05±.16 (2)
	DConvert	.19±.21 (2)	.40±.15 (1)	.18±.23 (2)	.21±.26 (2)	.14±.16 (2)	.26±.15 (1)	.07±.13 (3)	.15±.18 (2)	.07±.12 (3)	.27±.07 (1)	.14±.16 (2)	.17±.22 (2)
	DeepArch	.75±.31 (1)	.79±.22 (1)	.73±.32 (1)	.66±.43 (2)	.64±.39 (3)	.86±.17 (1)	.62±.42 (3)	.75±.36 (2)	.78±.37 (2)	.76±.30 (2)	.75±.39 (3)	.83±.30 (1)
	Jump3r	.09±.23 (1)	.02±.11 (2)	.02±.11 (2)	.07±.21 (1)	.02±.10 (1)	.00±.01 (2)	.03±.13 (1)	.03±.13 (1)	.02±.11 (2)	.03±.12 (2)	.02±.11 (2)	.05±.15 (1)
	HSMGP	.58±.49 (2)	.89±.30 (1)	.34±.47 (3)	.55±.50 (2)	.48±.50 (2)	.93±.25 (1)	.52±.50 (2)	.48±.50 (2)	.69±.46 (2)	.92±.25 (1)	.54±.49 (3)	.58±.49 (3)
	Average p_1 score/rank	.66/2.21	.63/2.26	.70/2.20	.62/2.22	.78/2.30	.63/2.39	.56/2.39	.61/2.40	.66/2.33	.52/2.37	.60/2.35	.67/2.33
5%	$7z$	.13±.28 (2)	.21±.28 (1)	.26±.31 (1)	.21±.34 (1)	.29±.36 (1)	.30±.38 (1)	.24±.32 (2)	.20±.33 (2)	.18±.27 (2)	.19±.25 (2)	.30±.34 (1)	.21±.29 (2)
	Kanzi	.92±.23 (2)	.98±.08 (1)	.90±.27 (2)	.93±.18 (2)	.93±.11 (2)	.95±.08 (1)	.90±.14 (3)	.93±.10 (2)	.75±.31 (2)	.91±.12 (1)	.81±.26 (2)	.78±.28 (2)
	ExaStencils	.12±.06 (3)	.15±.11 (2)	.16±.12 (2)	.18±.14 (1)	.34±.08 (3)	.36±.14 (2)	.34±.09 (3)	.39±.10 (1)	.21±.08 (2)	.26±.18 (1)	.26±.14 (1)	.25±.14 (1)
	Apache	.17±.21 (2)	.15±.24 (2)	.14±.18 (2)	.29±.27 (1)	.36±.37 (1)	.41±.33 (1)	.42±.38 (1)	.39±.41 (1)	.23±.25 (2)	.31±.32 (1)	.28±.31 (1)	.23±.21 (2)
	SQLite	.72±.22 (2)	.81±.07 (1)	.61±.35 (3)	.78±.17 (1)	.78±.16 (1)	.79±.06 (1)	.71±.25 (2)	.72±.25 (2)	.38±.20 (3)	.47±.07 (1)	.43±.13 (2)	.47±.11 (1)
	DConvert	.96±.18 (3)	.99±.01 (1)	.99±.01 (2)	.99±.01 (1)	.99±.01 (2)	.100±.01 (1)	.96±.18 (3)	.100±.01 (1)	.99±.01 (1)	.99±.01 (2)	.99±.02 (2)	.99±.01 (1)
	DeepArch	.12±.29 (2)	.11±.28 (2)	.06±.22 (3)	.17±.33 (1)	.09±.26 (3)	.18±.34 (2)	.18±.35 (2)	.33±.42 (1)	.00±.01 (3)	.06±.19 (2)	.18±.33 (1)	.09±.24 (2)
	Jump3r	.93±.25 (1)	.93±.25 (1)	.90±.30 (1)	.93±.25 (1)	.93±.25 (1)	.86±.34 (2)	.97±.18 (1)	.96±.18 (1)	.93±.25 (2)	.97±.18 (1)	.90±.30 (2)	.96±.18 (1)
	HSMGP	.75±.33 (1)	.77±.31 (1)	.78±.35 (1)	.77±.33 (1)	.70±.13 (1)	.68±.16 (1)	.68±.18 (1)	.70±.14 (1)	.86±.15 (1)	.81±.19 (2)	.84±.19 (1)	.86±.15 (1)
	Average p_1 score/rank	.59±.38	.82±.25	.81±.19	.76±.26	.50±.29	.62±.20	.56±.26	.47±.32	.37±.16	.37±.19	.38±.23	.40±.18
20%	$7z$	.99±.04 (1)	.99±.03 (1)	.98±.05 (2)	.98±.05 (2)	.98±.07 (1)	.98±.07 (1)	.98±.06 (1)	.98±.07 (1)	.95±.09 (2)	.95±.07 (1)	.96±.06 (1)	.93±.09 (2)
	Kanzi	.62±.09 (3)	.67±.06 (2)	.66±.05 (2)	.69±.05 (1)	.14±.02 (2)	.14±.03 (1)	.13±.02 (2)	.13±.02 (3)	.13±.05 (2)	.17±.11 (1)	.16±.06 (1)	.17±.12 (1)
	ExaStencils	.64±.28 (3)	.65±.27 (3)	.78±.23 (1)	.72±.24 (2)	.52±.24 (3)	.64±.17 (2)	.66±.12 (1)	.68±.17 (1)	.25±.19 (2)	.28±.20 (2)	.38±.29 (1)	.26±.19 (2)
	Apache	.90±.05 (1)	.89±.04 (2)	.88±.12 (3)	.90±.03 (1)	.93±.08 (3)	.94±.02 (2)	.93±.10 (3)	.95±.02 (1)	.85±.15 (3)	.89±.05 (1)	.87±.05 (2)	.89±.04 (1)
	SQLite	1.00±.00 (2)	1.00±.00 (1)	1.00±.00 (1)	1.00±.00 (1)	1.00±.00 (1)	1.00±.00 (2)	1.00±.00 (2)	1.00±.00 (1)	1.00±.00 (1)	1.00±.00 (2)	1.00±.00 (3)	1.00±.00 (1)
	DConvert	.04±.17 (2)	.24±.39 (1)	.17±.33 (1)	.24±.39 (1)	.25±.40 (1)	.09±.24 (2)	.22±.37 (1)	.19±.35 (1)	.03±.02 (4)	.11±.24 (3)	.22±.34 (1)	.14±.27 (2)
	DeepArch	1.00±.00 (2)	1.00±.00 (1)	1.00±.00 (1)	1.00±.00 (1)	1.00±.00 (1)	1.00±.00 (1)	1.00±.00 (1)	1.00±.00 (1)	1.00±.00 (1)	1.00±.00 (2)	1.00±.00 (3)	1.00±.00 (2)
	Jump3r	1.00±.00 (1)	1.00±.00 (1)	1.00±.00 (1)	1.00±.00 (1)	.63±.29 (2)	.72±.24 (1)	.73±.23 (1)	.75±.23 (1)	.82±.28 (1)	.83±.24 (1)	.80±.31 (1)	.84±.32 (1)
	HSMGP	.43±.22 (3)	.69±.13 (1)	.60±.15 (2)	.67±.12 (1)	.46±.24 (2)	.68±.14 (1)	.68±.22 (1)	.66±.19 (1)	.32±.12 (3)	.48±.13 (1)	.44±.13 (2)	.46±.11 (1)
	Average p_1 score/rank	.98±.04	.97±.05	.99±.04	1.00±.02	.63±.39	.60±.39	.69±.36	.80±.28	.98±.02	.98±.03	.98±.03	.98±.03
50%	$7z$	.67±.04 (2)	.70±.07 (1)	.70±.06 (1)	.70±.04 (1)	.24±.08 (4)	.29±.16 (3)	.42±.23 (1)	.35±.20 (2)	.64±.10 (3)	.68±.06 (1)	.67±.07 (2)	.69±.07 (1)
	Kanzi	.60±.22 (2)	.68±.15 (1)	.61±.17 (2)	.69±.18 (1)	.60±.15 (3)	.66±.18 (2)	.60±.14 (3)	.70±.13 (1)	.62±.25 (2)	.72±.19 (1)	.65±.26 (2)	.73±.22 (1)
	ExaStencils	.84±.17 (3)	.88±.05 (2)	.90±.04 (1)	.90±.03 (1)	.92±.11 (2)	.94±.02 (1)	.93±.03 (2)	.94±.02 (1)	.92±.03 (2)	.91±.04 (2)	.89±.09 (3)	.94±.03 (1)
	Apache	1.00±.00 (2)	1.00±.00 (2)	1.00±.00 (1)	1.00±.00 (1)	1.00±.00 (2)	1.00±.00 (1)	1.00±.00 (2)	1.00±.00 (1)	1.00±.00 (1)	1.00±.00 (2)	1.00±.00 (3)	1.00±.00 (2)
	SQLite	.28±.22 (3)	.42±.31 (1)	.34±.27 (2)	.37±.27 (1)	.30±.15 (3)	.39±.19 (2)	.46±.26 (1)	.43±.24 (1)	.24±.11 (3)	.32±.20 (1)	.28±.15 (2)	.31±.19 (1)
	DConvert	.99±.07 (2)	1.00±.00 (1)	1.00±.00 (1)	.99±.07 (2)	.97±.10 (2)	.97±.10 (2)	.96±.11 (2)	.99±.07 (1)	.96±.15 (2)	1.00±.00 (1)	.98±.11 (2)	.98±.11 (2)
	DeepArch	.74±.35 (1)	.77±.29 (1)	.77±.32 (1)	.78±.30 (1)	.83±.30 (1)	.81±.28 (1)	.85±.23 (1)	.76±.31 (2)	.87±.24 (2)	.83±.27 (2)	.94±.15 (1)	.86±.17 (2)
	HSMGP	.32±.20 (3)	.38±.22 (2)	.49±.23 (1)	.49±.23 (1)	.21±.19 (3)	.41±.24 (2)	.49±.30 (1)	.52±.28 (1)	.19±.23 (1)	.15±.06 (2)	.20±.18 (1)	.21±.15 (1)
	Average p_1 score/rank	1.00±.02	.99±.03	.99±.03	1.00±.02	.91±.15	.92±.13	.97±.18	.96±.18	.97±.16	.99±.00	.98±.04	.97±.05
	Average p_1 score/rank	.92±.04	.99±.00	.99±.00	.99±.00	.80±.00	.81±.05	.80±.01	.80±.00	.98±.00	.98±.00	.98±.00	.98±.00
90%	$7z$	.51±.19 (2)	.63±.18 (1)	.66±.19 (1)	.63±.18 (1)	.57±.14 (3)	.67±.18 (1)	.61±.14 (2)	.64±.14 (1)	.50±.22 (3)	.72±.21 (1)	.72±.22 (1)	.67±.20 (2)
	Kanzi	.88±.10 (2)	.90±.03 (1)	.88±.05 (2)	.88±.05 (2)	.91±.15 (3)	.94±.03 (2)	.92±.13 (3)	.95±.02 (1)	.86±.19 (3)	.92±.04 (1)	.87±.13 (3)	.89±.10 (2)
	ExaStencils	1.00±.00 (2)	1.00±.00 (3)	1.00±.00 (2)	1.00±.00 (1)	1.00±.00 (2)	1.00±.00 (1)	1.00±.00 (1)	1.00±.00 (2)	1.00±.00 (1)	1.00±.00 (1)	1.00±.00 (1)	1.00±.00 (1)
	Apache	.25±.13 (3)	.39±.27 (2)	.44±.28 (1)	.36±.22 (2)	.05±.01 (3)	.24±.36 (2)	.30±.40 (1)	.21±.34 (2)	.05±.13 (2)	.14±.27 (1)	.12±.25 (1)	.14±.26 (1)
	SQLite	.88±.27 (3)	1.00±.00 (2)	1.00±.00 (1)	1.00±.00 (2)	.89±.27 (3)	1.00±.00 (1)	1.00±.00 (2)	1.00±.00 (2)	.93±.21 (2)	.95±.19 (2)	.95±.18 (2)	.98±.13 (1)
	DConvert	.51±.19 (2)	.63±.18 (1)	.66±.19 (1)	.63±.18 (1)	.57±.14 (3)	.67±.18 (1)	.61±.14 (2)	.64±.14 (1)	.50±.22 (3)	.72±.21 (1)	.72±.22 (1)	.67±.20 (2)
	DeepArch	.88±.10 (2)	.90±.03 (1)	.88±.05 (2)	.88±.05 (2)	.91±.15 (3)	.94±.03 (2)	.92±.13 (3)	.95±.02 (1)	.86±.19 (3)	.92±.04 (1)	.87±.13 (3)	.89±.10 (2)
	HSMGP	.32±.20 (3)	.38±.22 (2)	.49±.23 (1)	.49±.23 (1)	.21±.19 (3)	.41±.24 (2)	.49±.30 (1)	.52±.28 (1)	.19±.23 (1)	.15±.06 (2)	.20±.18 (1)	.21±.15 (1)
	Average p_1 score/rank	1.00±.02	.99±.03	.99±.03	1.00±.02	.91±.15	.92±.13	.97±.18	.96±.18	.97±.16	.99±.00	.98±.04	.97±.05
	Average p_1 score/rank	.92±.04	.99±.00	.99±.00	.99±.00	.80±.00	.81±.05	.80±.01	.80±.00	.98±.00	.98±.00	.98±.00	.98±.00