HyFlex Competition Instance Summary

Matthew Hyde and Gabriela Ochoa *

This document shows the instances that were used for the CHeSC 2011 competition. These instances are available within the JAR file containing the HyFlex software framework[2] version used for the competition. The first four domains were released before the competition as training domains with 10 instances each. There are now 12 instances in each because we added two hidden instances for the competition. For the competition, these two hidden instances were added to three randomly selected training instances. The remaining two domains were hidden, and contain 10 instances each. For the competition, we selected 5 instances at random from each. Table 1 shows which instances were used from each domain, in the CHeSC 2011 competition.

Table 1: Instances used for the competition

domain	randomly selected instances (indices)
MAX-SAT	3, 5, 4, 10, 11
Bin Packing	7, 1, 9, 10, 11
Personnel Scheduling	5, 9, 8, 10, 11
Flowshop	1, 8, 3, 10, 11
TSP	0, 8, 2, 7, 6
VRP	6, 2, 5, 1, 9

Table 2: MAX-SAT instances

	name	source	variables	clauses
0	contest02-Mat26.sat05-457.reshuffled-07	[3]	744	2464
1	hidden-k3-s0-r5-n700-01-S2069048075.sat05-488.reshuffled-07	[3]	700	3500
2	hidden-k3-s0-r5-n700-02-S350203913.sat05-486.reshuffled-07	[3]	700	3500
3	parity-games/instance-n3-i3-pp	[4]	525	2276
4	parity-games/instance-n3-i3-pp-ci-ce	[4]	525	2336
5	parity-games/instance-n3-i4-pp-ci-ce	[4]	696	3122
6	highgirth/3SAT/HG-3SAT-V250-C1000-1	[1]	250	1000
7	highgirth/3SAT/HG-3SAT-V250-C1000-2	[1]	250	1000
8	highgirth/3SAT/HG-3SAT-V300-C1200-2	[1]	300	1200
9	MAXCUT/SPINGLASS/t7pm3-9999	[1]	343	2058
10	jarvisalo/eq.atree.braun.8.unsat	[3]	684	2300
11	highgirth/3SAT/HG-3SAT-V300-C1200-4	[1]	300	1200

*Automated Scheduling, Optimisation and Planning (ASAP) Group, University of Nottingham, Nottingham, UK.

Table 3: Bin packing instances

	name	source	capacity	no. pieces
0	falkenauer/u1000-00	[6]	150	1000
1	falkenauer/u1000-01	[6]	150	1000
2	schoenfieldhard/BPP14	[6]	1000	160
3	schoenfieldhard/BPP832	[6]	1000	160
4	10-30/instance1	[7]	150	2000
5	10-30/instance2	[7]	150	2000
6	triples1002/instance1	[7]	1000	1002
7	triples2004/instance1	[7]	1000	2004
8	test/testdual4/binpack0	[6]	100	5000
9	test/testdual7/binpack0	[6]	100	5000
10	50-90/instance1	[7]	150	2000
11	test/testdual10/binpack0	[6]	100	5000

For the personnel scheduling instances (Table 4), the best known solutions are included, where the values in bold indicate a proven optimal solution.

Table 4: Personnel scheduling instances.

	name	source	best known	staff	shift types	days
0	BCV-3.46.1	[5]	3280	46	3	26
1	BCV-A.12.2	[5]	1294	12	5	31
2	ORTEC02	[5]	**270**	16	4	31
3	Ikegami-3Shift-DATA1	[8]	**2**	25	3	30
4	Ikegami-3Shift-DATA1.1	[8]	**3**	25	3	30
5	Ikegami-3Shift-DATA1.2	[8]	**3**	25	3	30
6	CHILD-A2	[5]	1111	41	5	42
7	ERRVH-A	[5]	2197	51	8	42
8	ERRVH-B	[5]	6859	51	8	42
9	MER-A	[5]	9915	54	12	42
10	BCV-A.12.1	[5]	1294	12	5	31
11	ORTEC01	[5]	**270**	16	4	31

Table 5: Permutation flowshop instances

instance	name	source	no. jobs	no. machines
0	100x20/1	[11]	100	20
1	100x20/2	[11]	100	20
2	100x20/3	[11]	100	20
3	100x20/4	[11]	100	20
4	100x20/5	[11]	100	20
5	200x10/2	[11]	200	10
6	200x10/3	[11]	200	10
7	500x20/1	[11]	500	20
8	500x20/2	[11]	500	20
9	500x20/4	[11]	500	20
10	200x20/1	[11]	200	20
11	500x20/3	[11]	500	20

Table 6: Travelling salesman problem (TSP) instances

instance	name	source	no. cities
0	pr299	[9]	299
1	pr439	[9]	439
2	rat575	[9]	575
3	u724	[9]	724
4	rat783	[9]	783
5	pcb1173	[9]	1173
6	d1291	[9]	1291
7	u2152	[9]	2152
8	usa13509	[9]	13509
9	d18512	[9]	18512

Table 7: Vehicle routing problem (VRP) instances

instance	name	source	no. vehicles	vehicle capacity
0	Solomon/RC/RC207	[10]	25	1000
1	Solomon/R/R101	[10]	25	200
2	Solomon/RC/RC103	[10]	25	200
3	Solomon/R/R201	[10]	25	1000
4	Solomon/R/R106	[10]	25	200
5	Homberger/C/C1-10-1	[10]	250	200
6	Homberger/RC/RC2-10-1	[10]	250	1000
7	Homberger/R/R1-10-1	[10]	250	200
8	Homberger/C/C1-10-8	[10]	250	200
9	Homberger/RC/RC1-10-5	[10]	250	200

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