

Problem A: Reinforcement Logic Optimization for a General Cost Function

Beta Test Results:

Netlist 1_1

Cost Estimator 1		
Rank	Cost	Score
1	3.28226	100
2	3.30519	99.3061
3	3.31422	99.0356
4	3.34302	98.1824
5	3.3701	97.3935

Cost Estimator 2		
Rank	Cost	Score
1	2	100
2	2	100
3	2	100
4	2	100
5	2	100

Cost Estimator 3		
Rank	Cost	Score
1	1	100
2	1	100
3	1	100
4	1	100
5	1	100

Cost Estimator 4		
Rank	Cost	Score
1	2.74596	100
2	2.77645	98.9018
3	2.77715	98.8769
4	2.79132	98.375
5	2.79485	98.2508

Netlist 1_1

Cost Estimator 5

Cost Estimator 6

Rank	Cost	Score
1	1.00015	100
2	1.00022	99.9928
3	1.00236	99.7796
4	1.00387	99.6295
5	1.00387	99.6295

Cost Estimator 7		
Rank	Cost	Score
1	2.90925	100
2	2.91693	99.7367
3	2.9588	98.3252
4	2.98119	97.5868
5	2.99635	97.093

Rank	Cost	Score
1	1	100
2	1	100
3	1	100
4	1	100
5	1	100

Cost Estimator 8		
Rank	Cost	Score
1	2.22498	100
2	2.22703	99.9079
3	2.23128	99.7177
4	2.23997	99.3306
5	2.24004	99.3277

Netlist 2_1

Cost Estimator 1		
Rank	Cost	Score
1	38.8116	100
2	41.0032	94.6551
3	41.5706	93.3631
4	41.5706	93.3631
5	41.5728	93.3581

Cost Estimator 3		
Rank	Cost	Score
1	1	100
2	1	100
3	1	100
4	1	100
5	1	100

Cost Estimator 2		
Rank	Cost	Score
1	2	100
2	2	100
3	2	100
4	2	100
5	2	100

Cost Estimator 4		
Rank	Cost	Score
1	13.4445	100
2	13.5071	99.5366
3	13.6831	98.2564
4	13.9229	96.564
5	14.124	95.1893

Netlist 2_1

Cost Estimator 5		
Rank	Cost	Score
1	1.00015	100
2	1.00023	99.9921
3	1.06775	93.669
4	1.06775	93.669
5	1.07598	92.9524

Cost Estimator 7		
Rank	Cost	Score
1	33.0874	100
2	34.9535	94.6611
3	35.3005	93.7306
4	35.4637	93.2993
5	36.423	90.8419

Cost Estimator 6		
Rank	Cost	Score
1	1	100
2	1	100
3	1	100
4	1	100
5	1	100

Cost Estimator 8		
Rank	Cost	Score
1	3.99315	100
2	4.00731	99.6468
3	4.01506	99.4545
4	4.01506	99.4545
5	4.15532	96.0973

Netlist 3_1

Cost Estimator 1		
Rank	Cost	Score

Cost Estimator 2		
Rank	Cost	Score

1	48.4232	100
2	48.8989	99.0271
3	51.9306	93.2459
4	52.8171	91.6809
5	52.9819	91.3958

Cost Estimator 3		
Rank	Cost	Score
1	1	100
2	1	100
3	1	100
4	1	100
5	1	100

1	2	100
2	2	100
3	2	100
4	2	100
5	2	100

Cost Estimator 4		
Rank	Cost	Score
1	14.3264	100
2	14.438	99.2273
3	14.5169	98.6881
4	14.6285	97.9352
5	14.6285	97.9352

Netlist 3_1

Cost Estimator 5		
Rank	Cost	Score
1	1.00015	100
2	1.00023	99.9921
3	1.0777	92.804
4	1.0777	92.804
5	1.08698	92.0124

Cost Estimator 6		
Rank	Cost	Score
1	1	100
2	1	100
3	1	100
4	1	100
5	1	100

Cost Estimator 7		
Rank	Cost	Score
1	44.4413	100
2	45.2162	98.2862
3	45.3447	98.0078
4	45.3479	98.0007
5	45.7971	97.0396

Cost Estimator 8		
Rank	Cost	Score
1	3.96303	100
2	3.9631	99.9983
3	3.97022	99.8188
4	3.98835	99.365
5	3.98844	99.3629

Netlist 4_1

Cost Estimator 1		
Rank	Cost	Score
1	48.9118	100
2	54.0964	90.4159
3	138.597	35.2907
4	139.332	35.1045
5	140.327	34.8557

Cost Estimator 3		
Rank	Cost	Score
1	1	100
2	1	100
3	1	100
4	1	100
5	1	100

Cost Estimator 2		
Rank	Cost	Score
1	2	100
2	2	100
3	2	100
4	2	100
5	2	100

Cost Estimator 4		
Rank	Cost	Score
1	13.8441	100
2	14.9206	92.7855
3	26.2388	52.7622
4	27.0871	51.1098
5	27.099	51.0873

Netlist 4_1

Cost Estimator 5		
Rank	Cost	Score
1	1.00015	100
2	1.00023	99.9927
3	1.06425	93.9768
4	1.06425	93.9768
5	1.08331	92.3234

Cost Estimator 7		
Rank	Cost	Score
1	44.4571	100
2	78.7181	56.4764
3	127.344	34.911
4	127.344	34.911
5	131.483	33.8121

Cost Estimator 6		
Rank	Cost	Score
1	1	100
2	1	100
3	1	100
4	1	100
5	1	100

Cost Estimator 8		
Rank	Cost	Score
1	3.9405	100
2	4.02981	97.7836
3	4.96814	79.3154
4	4.96966	79.2911
5	5.0162	78.5555

Netlist 5_1

Cost Estimator 1		
Rank	Cost	Score
1	383.074	100
2	389.474	98.3567
3	421.444	90.8954
4	427.965	89.5106
5	427.965	89.5106

Cost Estimator 3		
Rank	Cost	Score
1	1	100
2	1	100
3	1	100
4	1	100
5	1	100

Cost Estimator 2		
Rank	Cost	Score
1	2	100
2	2	100
3	2	100
4	2	100
5	2	100

Cost Estimator 4		
Rank	Cost	Score
1	56.1613	100
2	56.1613	100
3	56.5193	99.3665
4	56.6982	99.053
5	57.2402	98.115

Netlist 5_1

Cost Estimator 5		
Rank	Cost	Score
1	1.00015	100
2	1.0004	99.975
3	1.16477	85.8671
4	1.16477	85.8671
5	1.36526	73.2575

Cost Estimator 7		
Rank	Cost	Score
1	368.395	100
2	370.947	99.3121
3	372.083	99.0089
4	372.083	99.0089
5	374.569	98.3519

Cost Estimator 6		
Rank	Cost	Score
1	1	100
2	1	100
3	1	100
4	1	100
5	1	100

Cost Estimator 8		
Rank	Cost	Score
1	6.71756	100
2	6.72529	99.885
3	6.72727	99.8557
4	6.73321	99.7675
5	6.73321	99.7675

Netlist 6_1

Cost Estimator 1		
Rank	Cost	Score
1	797.075	100
2	805.526	98.9509
3	889.213	89.6383
4	902.658	88.3032
5	902.658	88.3032

Cost Estimator 3		
Rank	Cost	Score
1	1	100
2	1	100
3	1	100
4	1	100
5	1	100

Cost Estimator 2		
Rank	Cost	Score
1	2	100
2	2	100
3	2	100
4	2	100
5	2	100

Cost Estimator 4		
Rank	Cost	Score
1	90.4352	100
2	90.4352	100
3	91.4562	98.8836
4	91.9305	98.3734
5	92.5145	97.7524

Netlist 6_1

Cost Estimator 5		
Rank	Cost	Score
1	1.00015	100
2	1.0005	99.9649
3	2.49113	40.1486
4	2.49543	40.0794
5	3.06134	32.6705

Cost Estimator 7		
Rank	Cost	Score
1	742.639	100
2	756.369	98.1848
3	756.369	98.1848
4	770.526	96.3808
5	780.895	95.101

Cost Estimator 6		
Rank	Cost	Score
1	1	100
2	1	100
3	1	100
4	1	100
5	1	100

Cost Estimator 8		
Rank	Cost	Score
1	8.37713	100
2	8.4543	99.0872
3	8.45775	99.0468
4	8.48489	98.73
5	8.49574	98.6039