

FineMap: A Fine-grained GPU-parallel LUT Mapping Engine

UPDATED RESULTS

The ABC experiments in the original paper were executed on the ABC patch mode CULS¹, which by default does not have the optimization flag enabled for the ABC code. Here, we re-run the main experiments of the paper on ABC built via the original method (i.e., using the Makefile) with the other experimental settings unchanged. The updated results are shown in Table II.

Comparing with Table I in the original paper, the only difference is the “Time” column of ABC *if*, i.e., the result quality of ABC and FineMap, as well as the runtime of FineMap are the same as those reported in the original paper.

TABLE II: Updated results of full-flow LUT mapping.

Benchmarks	AIG Statistics		ABC <i>if</i>			FineMap (Ours)		
	#AIG Nodes	Levels	#LUTs	Levels	Time	#LUTs	Levels	Time
twentythree	23339737	176	6659071	36	1197.0	6646639	36	71.3
twenty	20732893	162	5929939	33	898.1	5927717	33	49.4
sixteen	16216836	140	4486446	29	688.8	4471454	29	37.1
div_10xd	58620928	4372	22559744	864	1881.2	22793216	864	23.2
hyp_8xd	54869760	24801	11392768	4194	1827.1	11461888	4194	23.5
mem_ctrl_10xd	47960064	114	12386304	25	1184.4	12402688	25	11.5
log2_10xd	32829440	444	8200192	77	1202.6	8056832	77	10.6
multiplier_10xd	27711488	274	6054912	53	914.9	6000640	53	8.4
sqrt_10xd	25208832	5058	5857280	1033	798.6	5919744	1033	11.1
square_10xd	18927616	250	4080640	50	652.0	4007936	50	5.8
voter_10xd	14088192	70	2885632	17	332.3	2890752	17	4.2
sin_10xd	5545984	225	1492992	42	189.1	1483776	42	2.2
ac97_ctrl_10xd	14610432	12	2992128	4	183.1	2998272	4	3.2
vga_lcd_5xd	4054752	24	910912	7	76.9	910976	7	1.5
Geomean Ratio			1.000	1.000	59.8	0.998	1.000	1.0

¹<https://github.com/cuhk-eda/CULS>