Supplementary Material for Discriminative Structure Learning of Arithmetic Circuits

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Dataset	No evidence variables		50% evidence variables		80% evidence variables	
	ACMN	EACMN	ACMN	EACMN	ACMN	EACMN
NLTCS	-5.998	-6.006	-2.774	-2.781	-1.262	-1.265
MSNBC	-6.043	6.044	-2.925	-2.925	-1.560	-1.560
KDDCup	-2.161	**-2.142**	-1.010	**-1.001**	-0.393	**-0.387**
Plants	-12.803	-12.824	**-4.843**	-4.891	-1.928	-1.928
Audio	-40.330	-40.300	-19.667	19.647	-7.791	-7.777
Jester	-53.306	**-53.054**	-25.792	**-25.597**	-10.470	**-10.422**
Netflix	-57.216	**-56.964**	-27.480	**-27.348**	-11.136	**-11.065**
Accidents	-27.107	**-26.559**	-9.589	**-9.185**	-3.994	**-3.722**
Retail	-10.883	**-10.846**	-4.873	**-4.845**	-1.704	**-1.694**
Pumsb-star	-23.554	**23.251**	-7.171	**-6.844**	**-3.059**	-3.281
DNA	-80.026	-80.059	-34.657	-34.561	-12.284	**-12.159**
Kosarek	-10.840	**-10.718**	-5.199	**-5.098**	-2.634	**-2.594**
MSWeb	-9.766	-9.746	-5.692	-5.682	-1.370	-1.363
Book	-35.555	35.399	-17.521	-17.528	-7.427	7.364
EachMovie	-55.796	**-55.120**	-27.800	**-27.354**	10.383	-10.608
WebKB	-159.130	**-156.255**	-5.692	**-76.827**	-31.053	**-30.189**
Reuters-52	-92.365	**-87.975**	-45.718	**-43.129**	-19.032	**-17.895**
20 Newsgroup	-161.130	**-158.603**	-79.494	**-78.228**	-30.292	**-29.674**
BBC	-257.102	**-254.504**	-125.337	**-124.539**	-47.434	-47.298
Ad	16.530	**-15.446**	-5.607	**-5.184**	-1.761	-1.658

Table 1: Average (conditional) log-likelihood comparison of ACMN and EACMN. Bold numbers indicate significant differences based on a two-tailed paired t-test ($p < 0.05$) on the test set.