Decision Trees

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Difficult properties (ass. 0)

MONK-1	$(a_1 = a_2) \vee (a_5 = 1)$
MONK-2	$a_i = 1$ for exacly two $i \in \{1, 2, \ldots, 6\}$
MONK-3	$(a_5 = 1 \wedge a_4 = 1) \vee (a_5 \neq 4 \wedge a_2 \neq 3)$

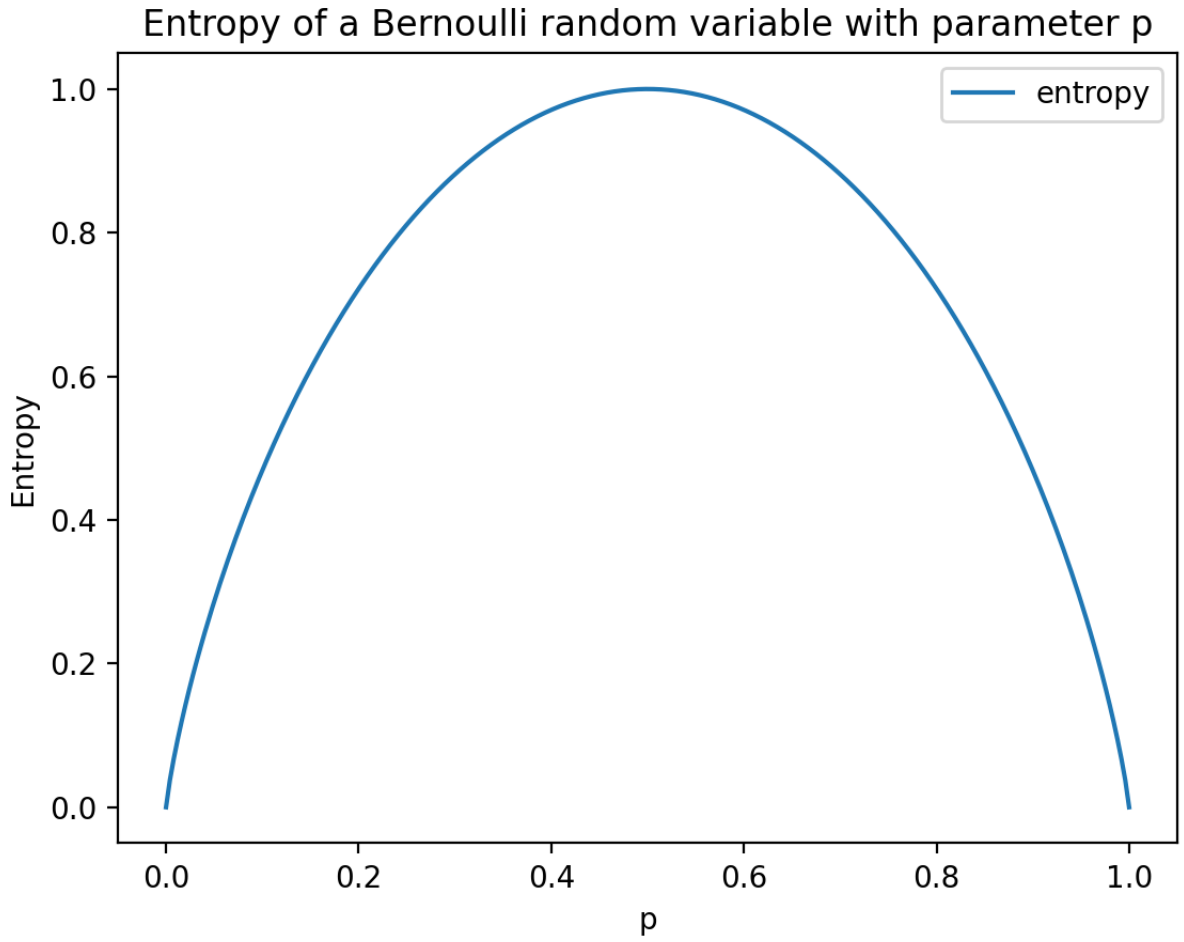
- <In ass.5 when you generate the tree for monk-2 just insert the pic of the printed tree here>

Entropies of the MONK datasets (ass 1.)

- <Just insert here the table from assigment 1>

Entropy (ass. 2)

$$\text{Entropy}(S) = -\sum_i p_i \log_2 p_i$$



Information gain as a heuristic (ass. 3 & 4)

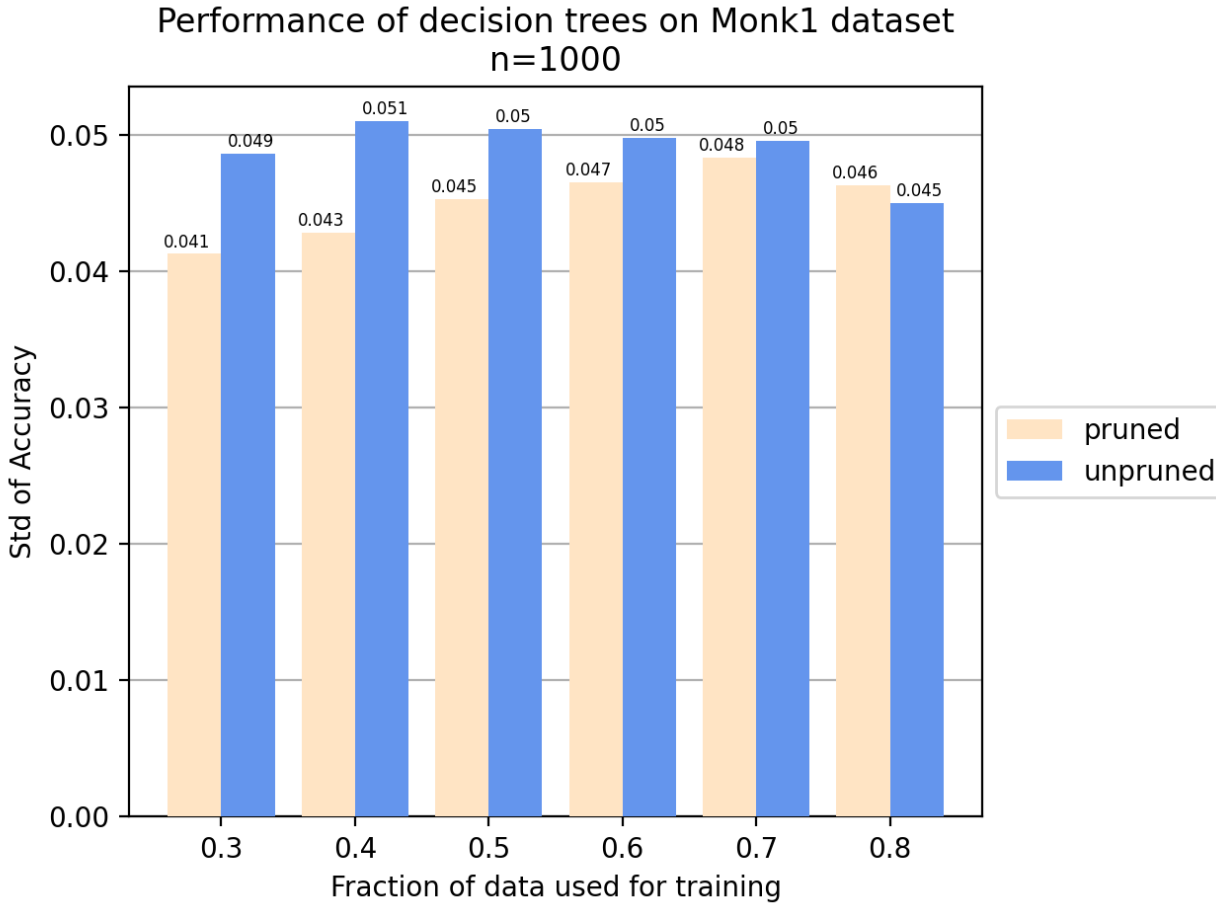
Information Gain

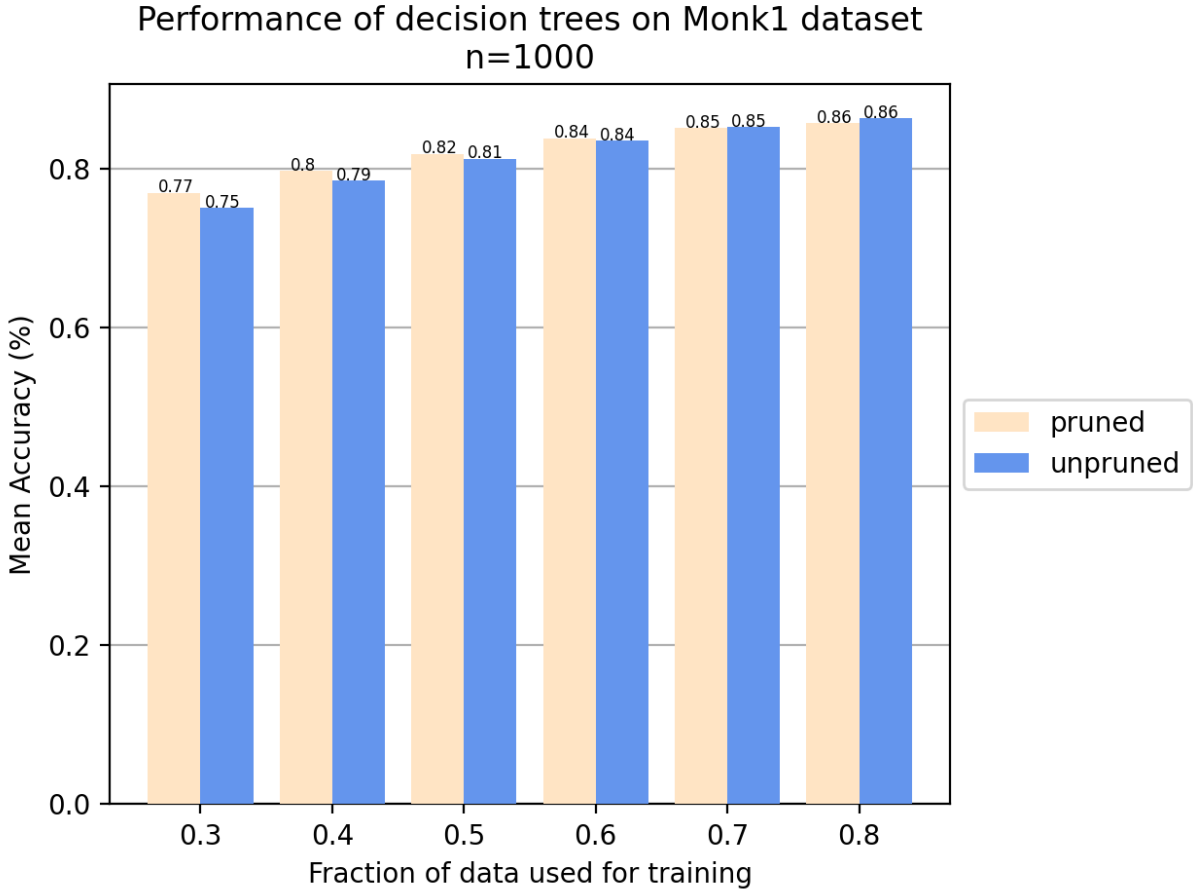
Dataset	a_1	a_2	a_3	a_4	a_5	a_6
MONK-1	0.0753	0.0058	0.0047	0.0263	0.2870	0.0008
MONK-2	0.0038	0.0025	0.0011	0.0157	0.0173	0.0062
MONK-3	0.0071	0.2937	0.0008	0.0029	0.2559	0.0071

Assignment 5

- <just insert your table>

Pruning (ass. 6 & 7)





Pruning (ass. 6 & 7)