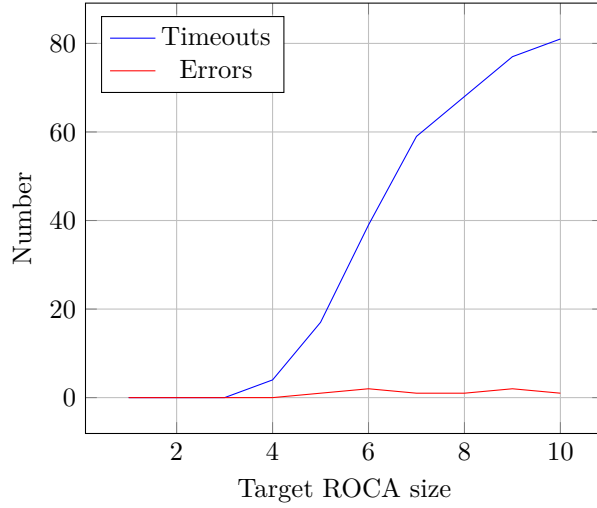


1 Timeouts and errors

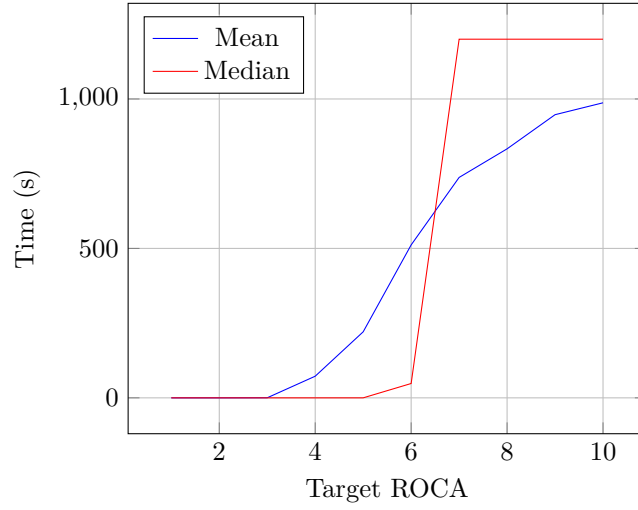


Target ROCA size	Alphabet size	Timeouts	Errors
1	2	0	0
2	2	0	0
3	2	0	0
4	2	4	0
5	2	17	1
6	2	39	2
7	2	59	1
8	2	68	1
9	2	77	2
10	2	81	1

2 Times

2.1 Total time

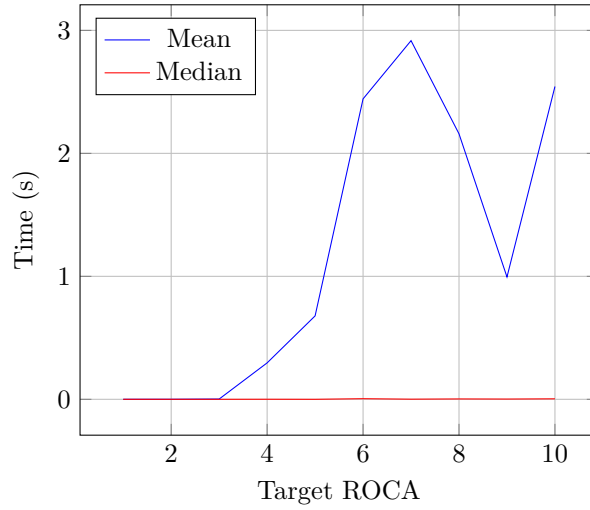
Time from start to finish. If a timeout is reached, the value is replaced by *two minutes* (i.e., the time limit).



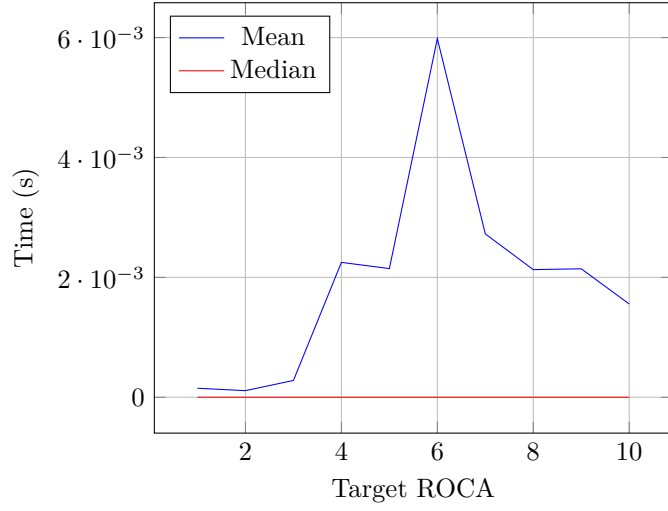
2.2 Counterexample time

Time to *find* a counterexample, i.e., time taken by the equivalence oracles. From now on (until the end of the document), runs that ended up in a timeout are removed from the dataset.

2.2.1 ROCA

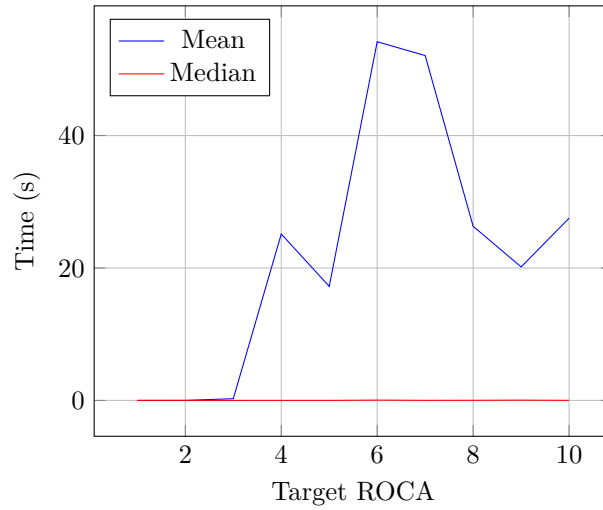


2.2.2 DFA

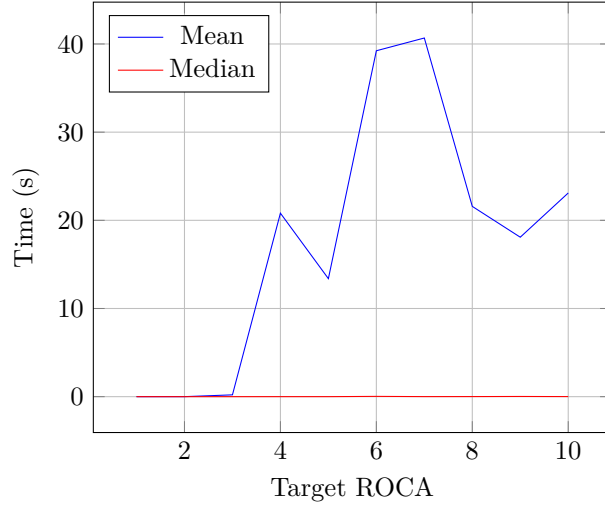


2.3 Learning a DFA for a fixed counter limit

Time to refine the table using an equivalence query's counterexample. Note that it includes the time needed to make the table closed, Σ -, and \perp -consistent.

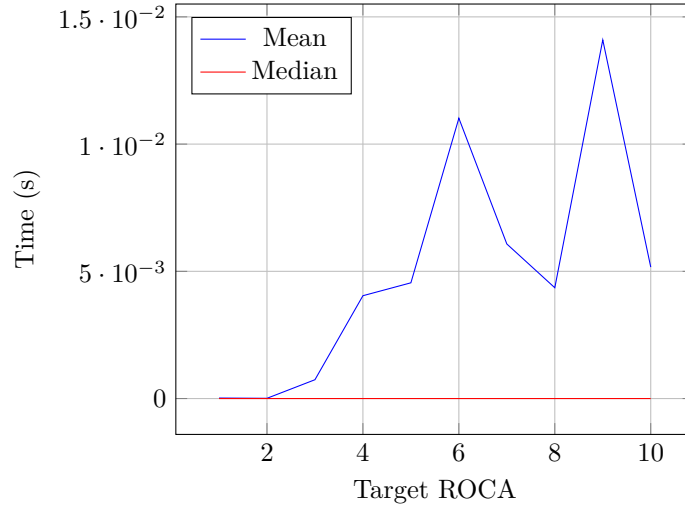


2.4 Making table closed, Σ -, and \perp -consistent



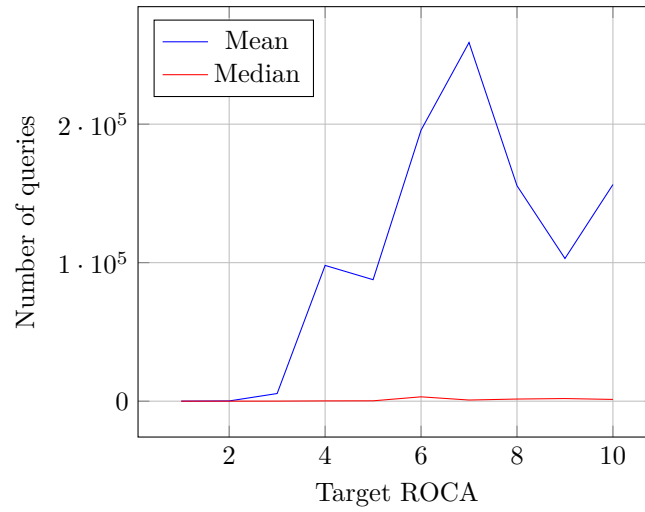
2.5 Computing periodic descriptions

Time to find the periodic descriptions AND to construct the corresponding ROCAs.

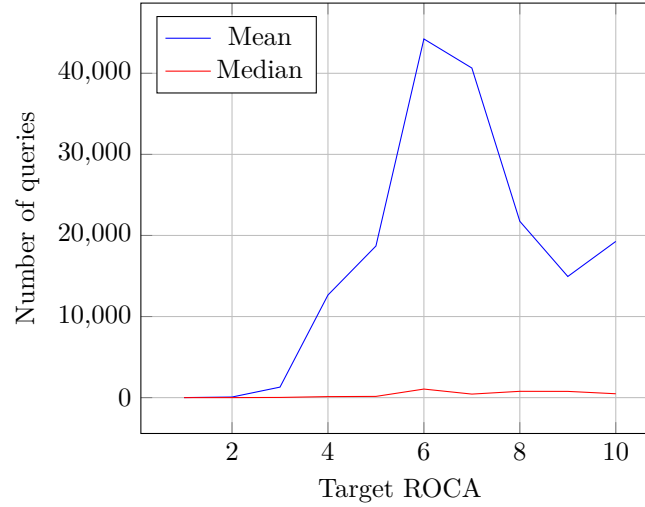


3 Number of queries

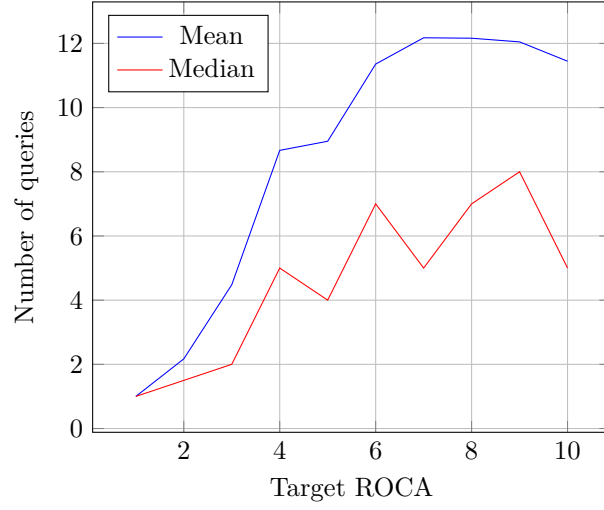
3.1 Membership queries



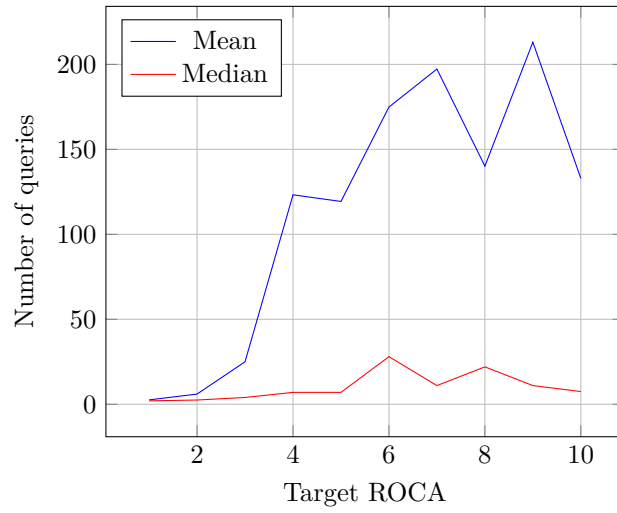
3.2 Counter value queries



3.3 Partial equivalence queries

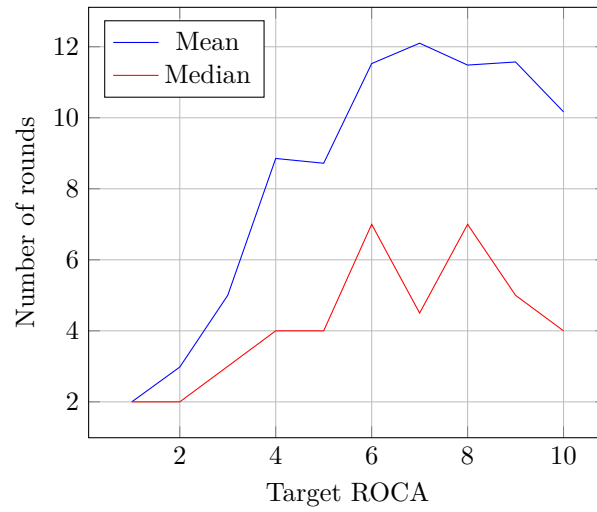


3.4 Equivalence queries



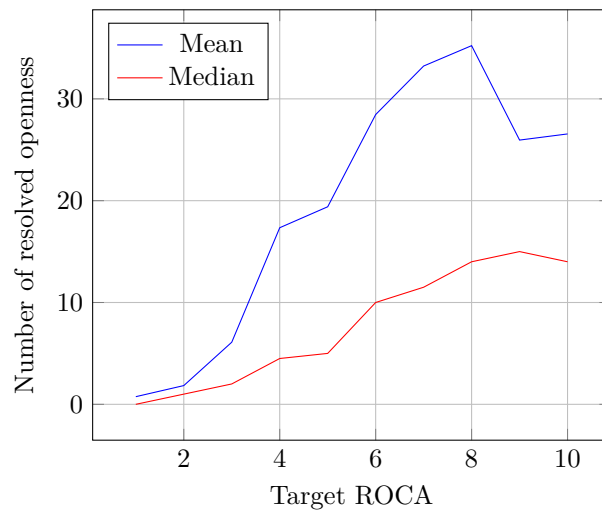
4 Number of rounds

Equivalent to number of processed ROCA counterexamples + 1.

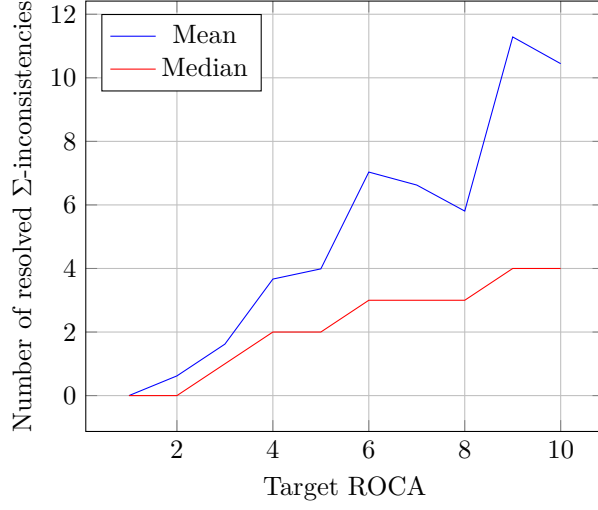


5 Number of operations to make the table nice

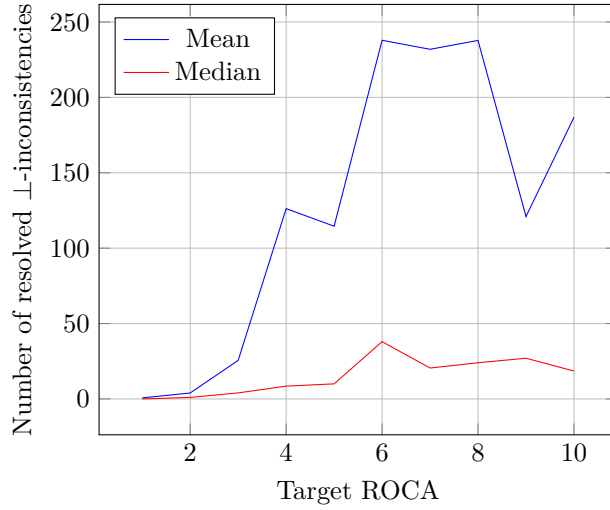
5.1 Openness



5.2 Σ -inconsistencies

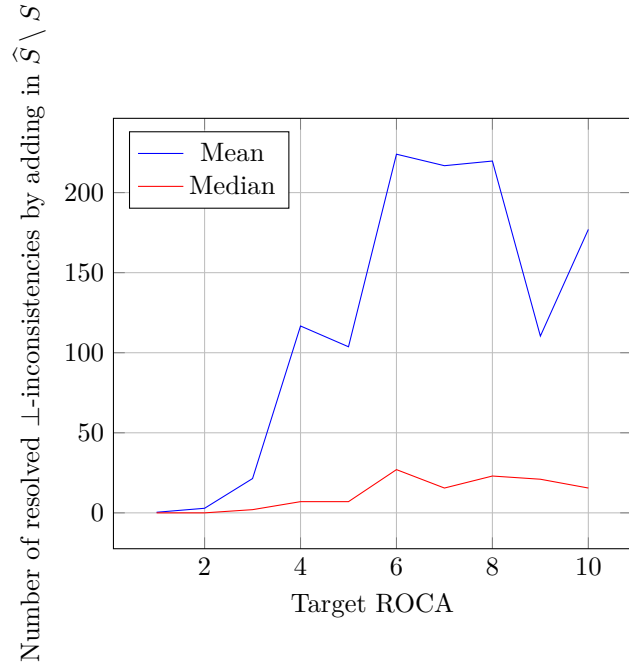


5.3 \perp -inconsistencies



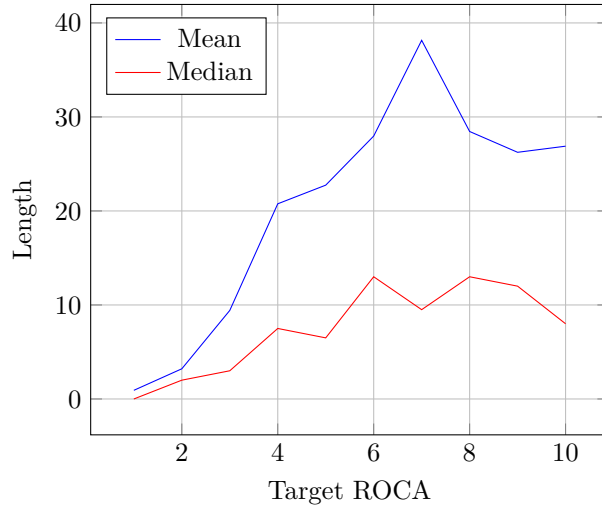
5.3.1 \perp -inconsistencies resolved by adding separators in $\hat{S} \setminus S$

Included in the number of \perp -inconsistencies.

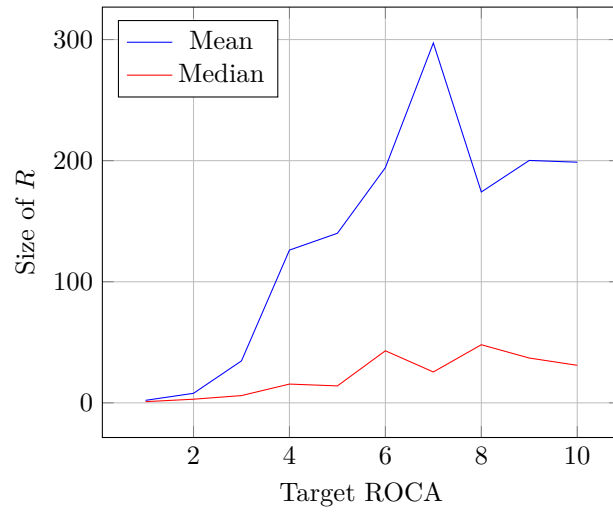


6 Size of sets and counterexamples

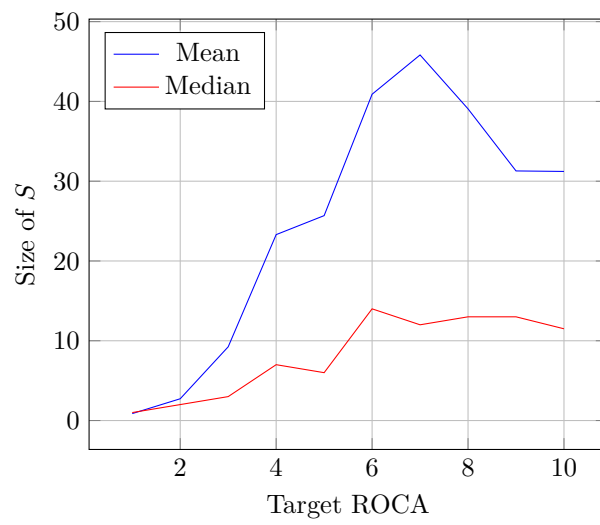
6.1 Length of the longest counterexample



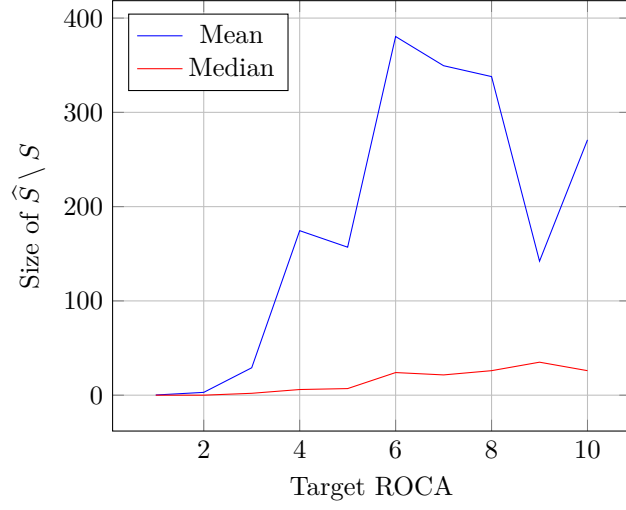
6.2 Size of R



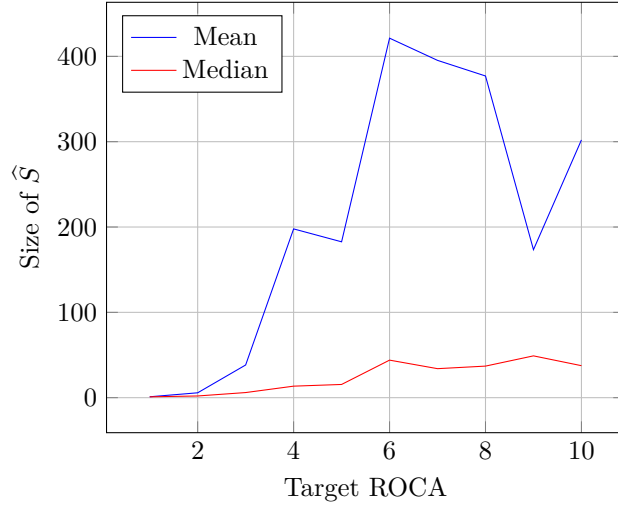
6.3 Size of S



6.4 Size of $\hat{S} \setminus S$

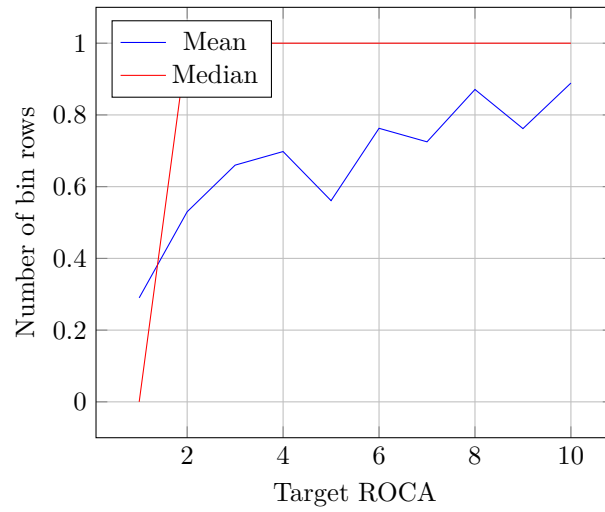


6.5 Size of \hat{S}



6.6 Number of bin rows

A bin row $u \in R$ is such that $C_\ell(u) = \perp$. This is more for debugging purpose. I'm satisfied by the figure, so you can ignore it if you want.



7 Size of the learned ROCA

