

IMPLEMENTATION OF L^* LEARNING ALGORITHM RIVEST SCHAPIRE VARIANT

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SCOPE OF THE PROJECT

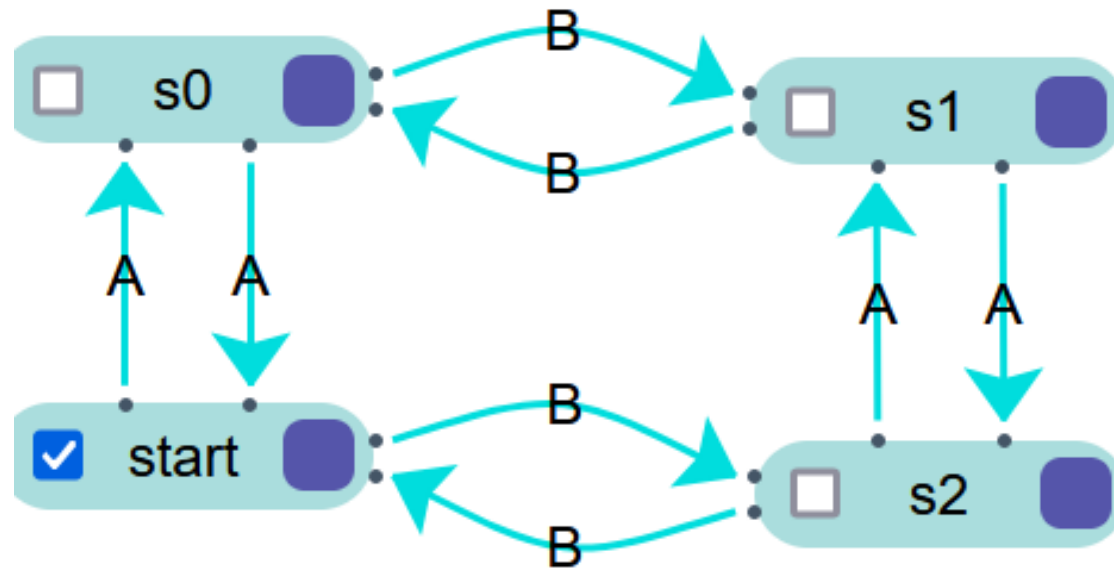
- Implemented the L^* Learning algorithm proposed by Angluin in python
- Implemented the L^* improvement proposed by Rivest-Schapire in python
- Compare the results obtained in terms of no. of membership queries and the no. of rows in observation table
- Modelled a robot environment using Simulink for a DFA which accepts even number of a's and b's

SUMMARY OF RESULTS

DFA	L* ALGORITHM	NO. OF MEMBERSHIP QUERIES	NO. OF ROWS	NO. OF COLUMNS
DFA that accepts the strings containing three consecutive	ANGLUIN RIVEST-SCHAPIRE	526 505	17 17	3 3
DFA that accepts the strings containing even number of 'a' and 'b'	ANGLUIN RIVEST-SCHAPIRE	534 168	15 9	3 3
DFA that accepts any string.	ANGLUIN RIVEST-SCHAPIRE	9 9	3 3	1 1
DFA that accepts strings starting with 'a'	ANGLUIN RIVEST-SCHAPIRE	121 75	9 7	2 2
DFA that contains at least one dead state	ANGLUIN RIVEST-SCHAPIRE	239 115	13 9	2 2
DFA mentioned in the paper published by Rivest-Schapiere	ANGLUIN RIVEST-SCHAPIRE	934 234	21 9	3 4

DEMONSTRATION-PYTHON CODE

DFA WHICH ACCEPTS EVEN NUMBER OF A'S AND B'S



DEMONSTRATION-ROBOT ENVIRONMENT

CONCLUSION

- The no of rows and membership queries decreased for most of the DFAs
- Robot sensors could be used to obtain the membership query
- Could implement in MATLAB and use the result from the virtual robot environment as a result of membership query
- Enhance the user interface to provide visual feedback
- We could incorporate more practical scenarios.