FACULTY OF MECHANICAL ENGINEERING
HCMUTE

ARTIFICIAL INTELLIGENCE SOLVE RUBIK'S CUBE

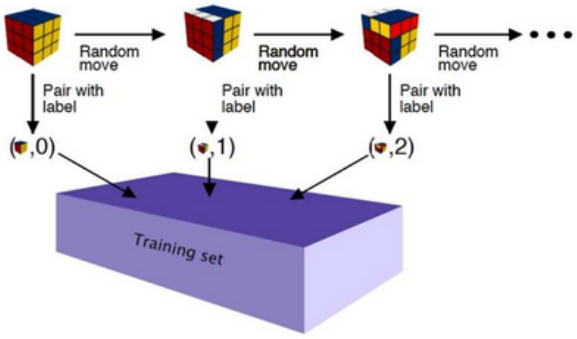
ABSTRACT

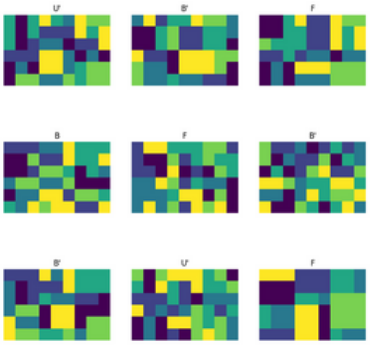
Pierre Baldi, professor of computer science at the University of California, Irvine – said that "Artificial intelligence can defeat the world's best human chess and Go players, but some of the more difficult puzzles, such as the Rubik's Cube, had not been solved by computers, so we thought they were open for AI approaches".

RUBIK'S CUBE

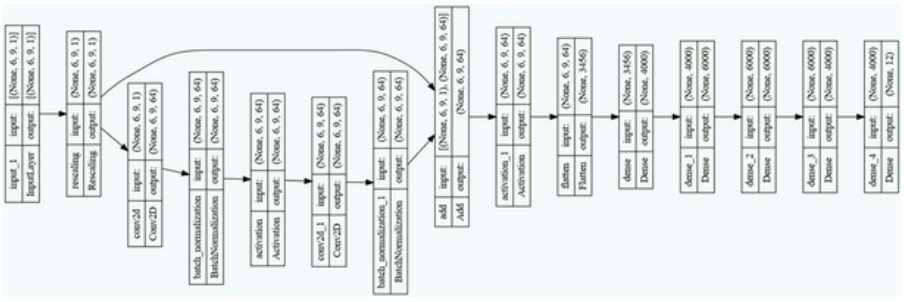
Rubik's cube contains up to 43,252,003,274,489,856,000 permutations. But, it only takes 20 moves to solve optimally.

DATASET





MODEL



GITHUB

https://github.com/TinozgDominic/AI2022/tree/main/RubikAI

RESULT

Required turns	Number of test case	Accepted	Number of possible test case
1	12	12	12
2	144	144	144
3	1728	1728	1728
4	2676	2670	20736
5	3978	3938	248832
6	4096	3895	2985984
7	3645	3105	35831808
8	3941	2922	429981696
9	3103	1868	5159780352
10	2833	1345	61917364224

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