

Science and Rubik's Cube

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INTRODUCTION

Rubik's Cube: 50 years old

The most characteristic part of the cube is the contradiction between simplicity and complexity.

UNSCRAMBLING and CODES

Algorithms to solve the cube are manifold – from simple, slow to complex, fast. Key ingredients in speedcubing:

- Pattern Recognition
- Algorithm selection for next step
- Fast finger tricks for speed
- And of course... a good physical cube



Artificial Intelligence

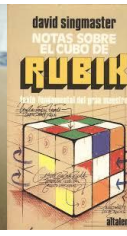
DeepCube: an artificially intelligent system that is as good at playing the Rubik's Cube as the best human master solvers. The system learned to dominate the Cube in just 44 hours and without any human intervention.

Further information:

[#rubsci](http://magsci.eu)

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SCIENCE



Commutators and conjugates
= Quantum mechanics: operators
Examples: sexy move $S = R U R' U'$, $S^5 = I$
Examples: Cyclic permutation of 3 edges
 $R^2 U R U' R' U' R' U' R'$
R and L commute! $R L = L R$

<https://www.commutators-conjugates/>

Entropy and Rubik's Cube
5 Life Lessons from the Rubik's Cube
It is easier to create chaos than to create order.



<https://goodmornproject.com/bits-and-pieces/life-lessons-from-the-rubiks-cube-bit/>

More info on recreational Maths



CONCLUSIONS

Learning to solve (or speedsolve) Rubik's Cube allow to deal with mathematics but also with computer science.

The Cube has been used in scientific experiments and may be related to other fields of knowledge.

It can be used to teach complex concepts, like entropy.

The Cube attracts young people in fairs. It is a strong attractor, sometimes too strong.