Teach Rubik's

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States in a Rubik’s cube

Goals

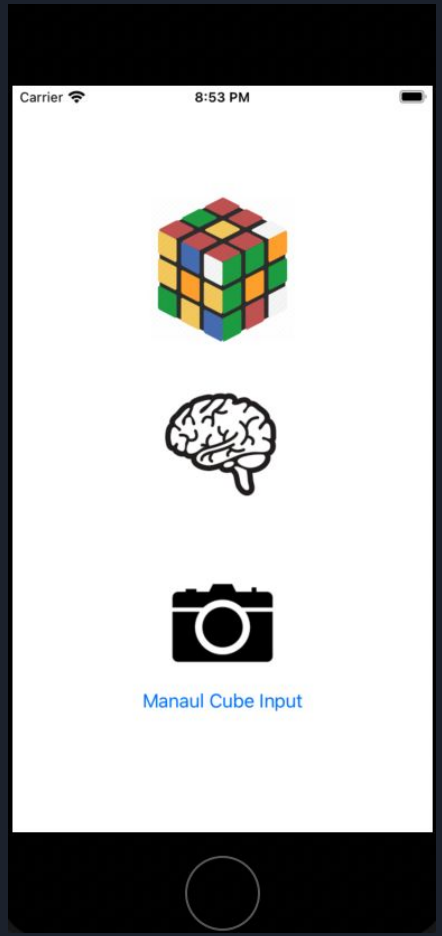
- Show how easy it can be!
- Grow the interest in twisty puzzles
- Foster an interactive environment

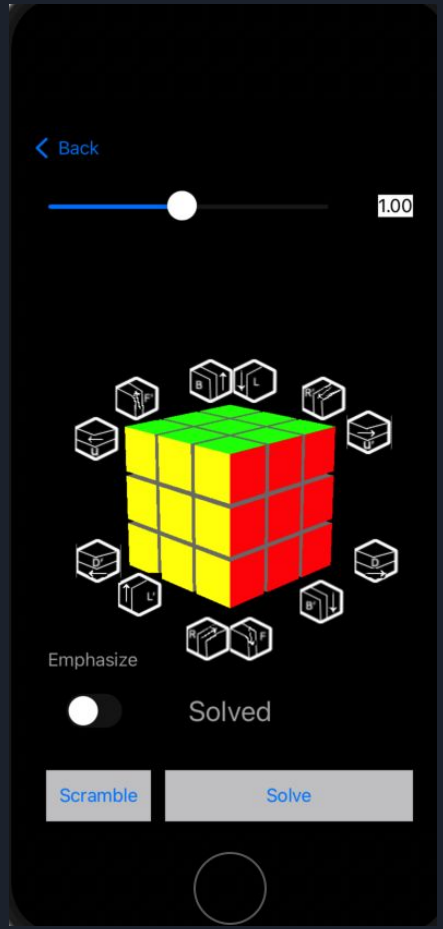
How the app works

The camera loads a cube

Walks you through each step emphasizing the important things to notice.

Teaches all the the required algorithms





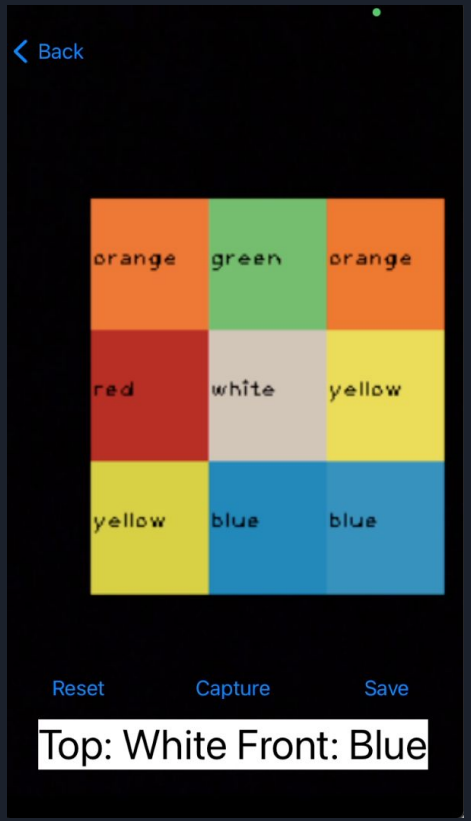
Technical Problems - Represent a Rubik's Cube

- Represent a Twisty Puzzle Virtually
  - 2 virtual cubes

- SCNActions controlling the animations.

Technical Problems - Loading a Cube with Camera

- Unsuccessful Attempt : Used Canny Edge detection
- Successful: Have the user press capture, assume cube is positioned

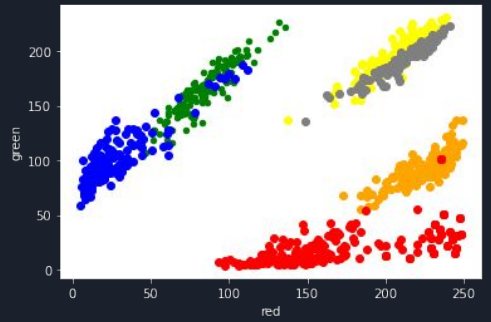


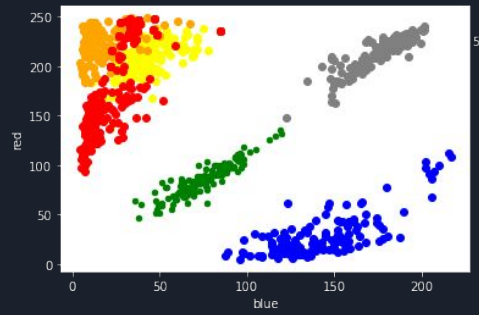
Technical Problems - Machine Learning Uses Detecting color

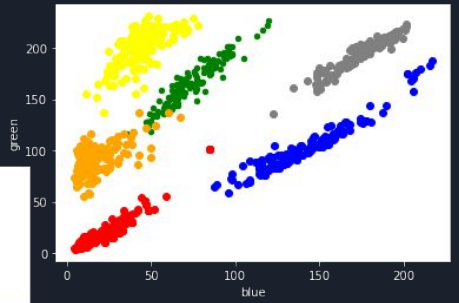
Load the mean RGB values for each square

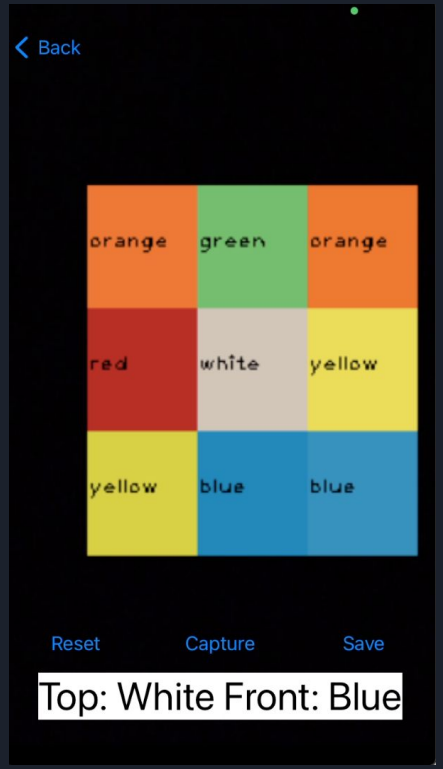
Use out of the box nearest neighbor classifier to classify

Allow the user to cycle through predictions









Technical Problems - Teaching Notation

Cube Notation is vital

Algorithms are your toolkit

Next Steps For Teach Rubik

- Larger cubes
- Non Cube puzzles
- Sky is the limit

Magic Cube 4D

Market Research

- Youtube videos, and guides
- GoCube - retails for 100$

DEMO/QA