## A Robot That Solves the Rubik's Cube Puzzle

Mathew Zachariah Maja Mataric Team from Wabash Valley

Zachariah Mathew (father) and David Mutchler Rose-Hulman Institute of Technology 5500 Wabash Ave Terre Haute, IN 47803 mutchler@rose-hulman.edu (812) 877-8426



## **A Robot That Solves** the Rubik's Cube Puzzle

My project is a robot that can solve the Rubik's Cube® puzzle [1]. I made it by following the instructions by David Gilday at mindcuber.com [2]. All the pictures herein are snapshots taken from videos at that site, but will be replaced by photographs from my real robot for the final submission.

the vertical plane until it

The robot is built from a LEGO® Mindstorms® EV3 kit [3]. The robot repeatedly:

- 1. Spins the Rubik's Cube in the horizontal plane by using servo at the Rubik's Cube's base.
- 2. Uses a color sensor to wait for the appropriate color to appear.
- 3. Uses another servo to grab the Rubik's Cube at the appropriate spot.





Uses yet another servo to spin the Rubik's Cube in 4.



a

We are grateful to **Rose-Hulman Institute** of Technology for their generous support.

**References** (all web references are from June, 2019) [1] www.rubiks.com.

[2] Build your own LEGO Mindstorms robot to solve the Rubik's Cube, by David Gilday. mindcuber.com.

[3] Lego Mindstorms. www.lego.com/en-us/mindstorms/about-ev3.

LEGO and MINDSTORMS are trademarks of the LEGO Group. Rubik's Cube is a trademark of Seven Towns Limited.