

Lego Sorting System

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ABSTRACT

With 19 billion Lego's created each year, about 2350 unique sizes, and 52 different colors, the diversity of Lego bricks allows for astounding creativity. However, this can also yield to a chaotic mess of bricks. A solution to such disorganization is a machine that arranges Lego's by likeness.



Unsorted Legos



During Sort



Legos in Bins

CONCLUSION

The final product satisfies the specification of sorting Legos by color. This solution has been able to provide a convenient alternative to the time consuming process of manual sorting.

DESIGN

- Implemented using Atmel's STM32F446-ARM Nucleo Board and programmed in C
- Controlled gear motors and actuator with an H-bridge alongside code for forward, reverse, and halted movement
- Infrared sensors monitored by Interrupts to sense position of bricks
- Communication with TCS34725 Color Sensor to retrieve information regarding color
- Servos controlled with PWM by varying the duty cycle

