AutoCA(r)D: A smart card shuffler

ELECTRICAL & COMPUTER ENGINEERING
UNIVERSITY OF MICHIGAN

Honors Capstone WN 23
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ENGINEERING HONORS PROGRAM
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Introduction

- AutoCA(r)D is an automated and programmable approach to shuffling and dealing cards
- The device is controlled by user inputs on shuffling and dealing parameters depending on the rules of a given card game, customizable through a web page
- We want to explore the “fairness” of a given shuffle, so that card counting or cheating is possible or impossible, depending on the scenario

System Integration

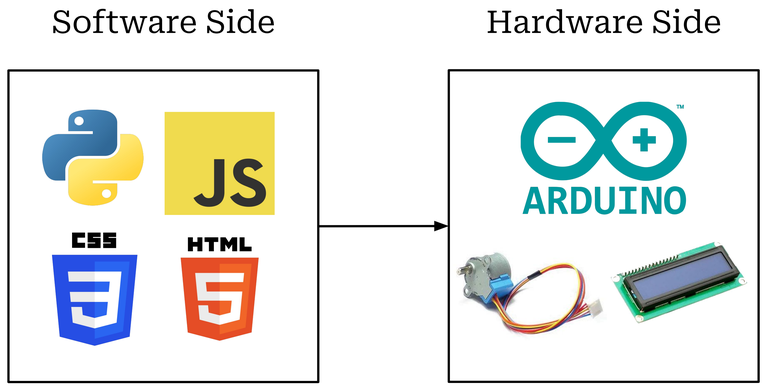


Diagram of the system integration demonstrating the relationship between hardware and software

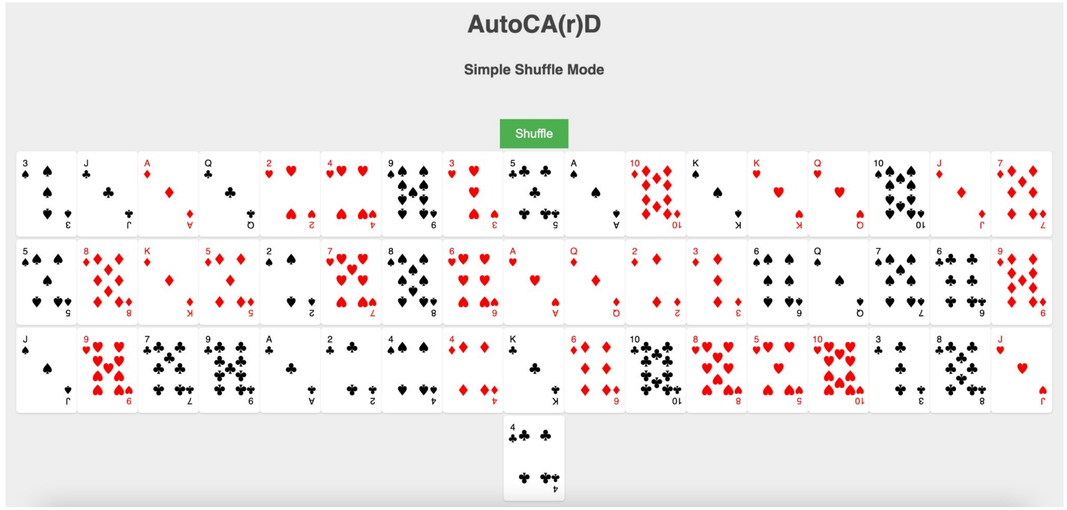
Applications

- One of the most interesting applications of this project is the exploration of randomness and fairness in card games, where players can choose their desired shuffling presets
- Another impactful application is in accessibility for users with motor impairments or disabilities, so they can still enjoy playing card games with friends and family

Challenges & Future Improvements

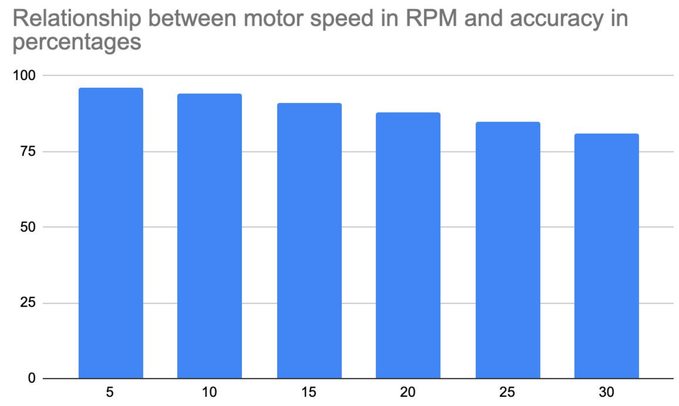
- Challenges with motors
  - Speed of the motors is slow compared to a human dealer
- Future Improvements
  - Add features to GUI for more customization options
- Challenges with the resolution of the 3D printers available

Simulation Techniques



GUI for shuffling deck of cards and outputting an array to the motors

Testing Results



- Comparison between the simulation sequence of the deck on the User Interface with the sequence shuffled by the actual device. We were able to notice that the faster the motors run the less accurate the system is.

Acknowledgements

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Honors Department