Kickstarter

The emmersive checkersboard

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Contents

Chapter 1

Introduction

The emmersive checkersboard aims to create an interactive solo or group game experience. The soluation this product aims to solve is the lack of a physical boardgame experiences when a player has no people nearby to play with. The emmersive checkersboard will provide a physical boardgame experience without the need for other players to be present.

Target audience The primary target for this project are boardgame enthusiasts who enjoy playing real live games but have no one to play with in person, or want to play solo. In the past these players would need to go to online platforms to play with strangers or AI opponents in a digital format which lacks the emmersion of a real life game.

Working explanation The checkersboard uses a combination of sensors and actuators to detect the movement of game pieces by the player and to move the pieces themselves when an AI component or a remote playter makes a move.
The detection of game piece movement is done using hall sensors embedded in each square of the boardgame which can detect the presence of magnets in the game pieces.
The movement of game pieces is done using two stepper motors hidden under the board that can move a electromagnet on a x- and y-axis below the board to move the pieces on top of the board.

Game options

- Solo play against an AI opponent
- Multiplayer with two players one of which is remote

Chapter 2

Components and Electrical Design

2.1 Sensors

The emmersive checkersboard uses a variety of sensors to detect player input and game state. Each square on the board is equipped with a hall sensor to detect piece placement and movement and each board piece that the player can move containce a small magnet.

2.2 Actuators

For the actuators two stepper motors are used to move a

2.3 Electrical schematic and PCB design

Chapter 3

System Architecture

3.1 System overview

3.2 Control logic

Chapter 4

Maintenance

4.1 Montage and enclosure