



# AI Checkers Robot

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## Project Goal

Building an AI robotic arm to play Checkers against a human player.

## Timeline

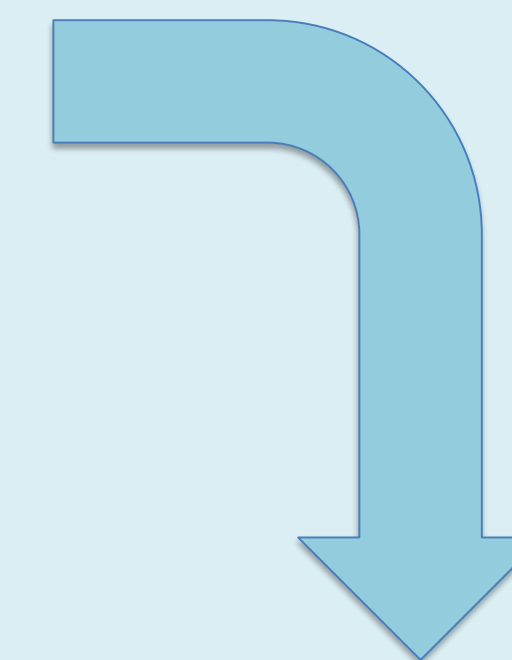
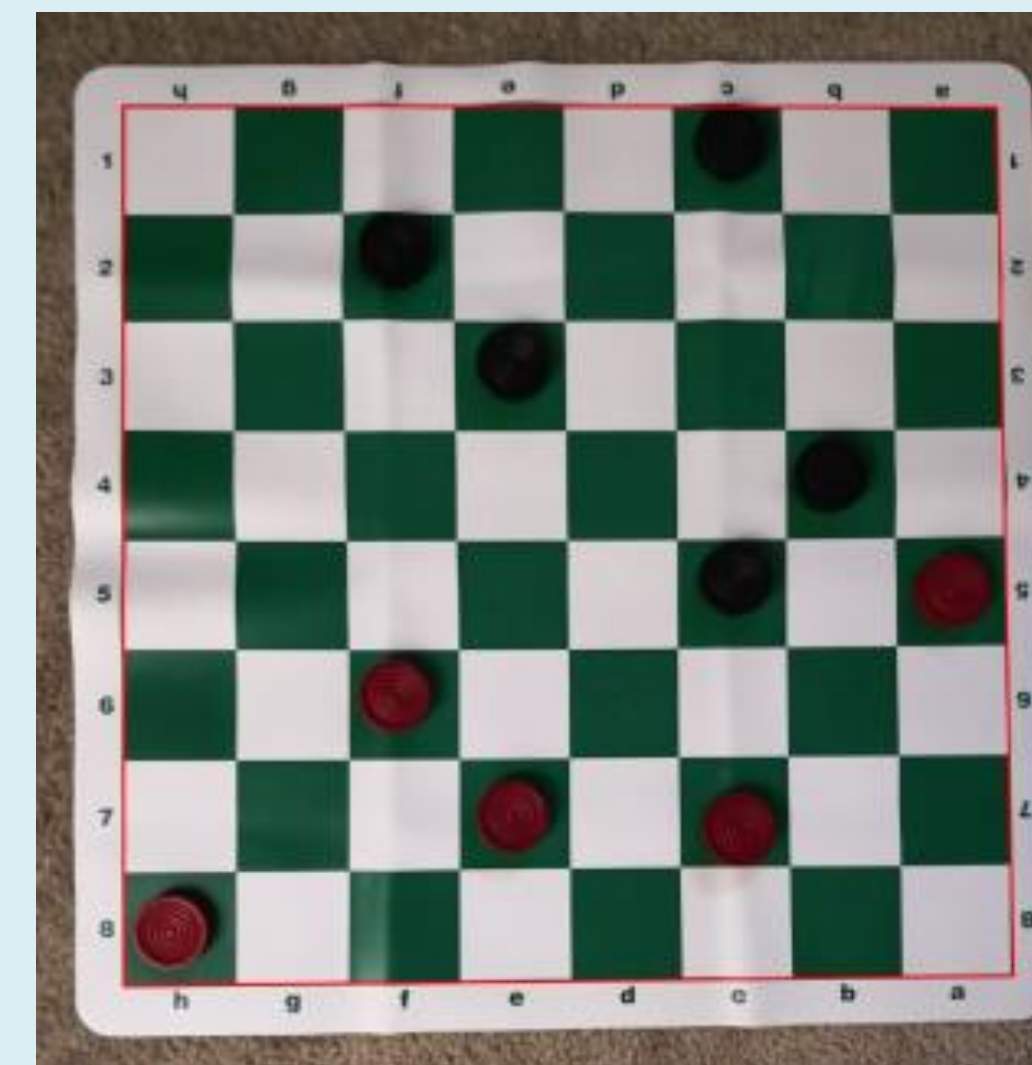
- 1-2 Project Plan
- 3-4 Arm Design
- 5-6 Machine Vision
- 7-8 Game Rules Algorithm
- 9-10 Game Rules and AI Code

## Future Goals

- Implementing the AI algorithm.
- Building the arm and writing the code to control it.
- Testing the system and adding extra features.

## Progress

- Developed machine vision algorithm for detecting the location of checkers pieces on a board.

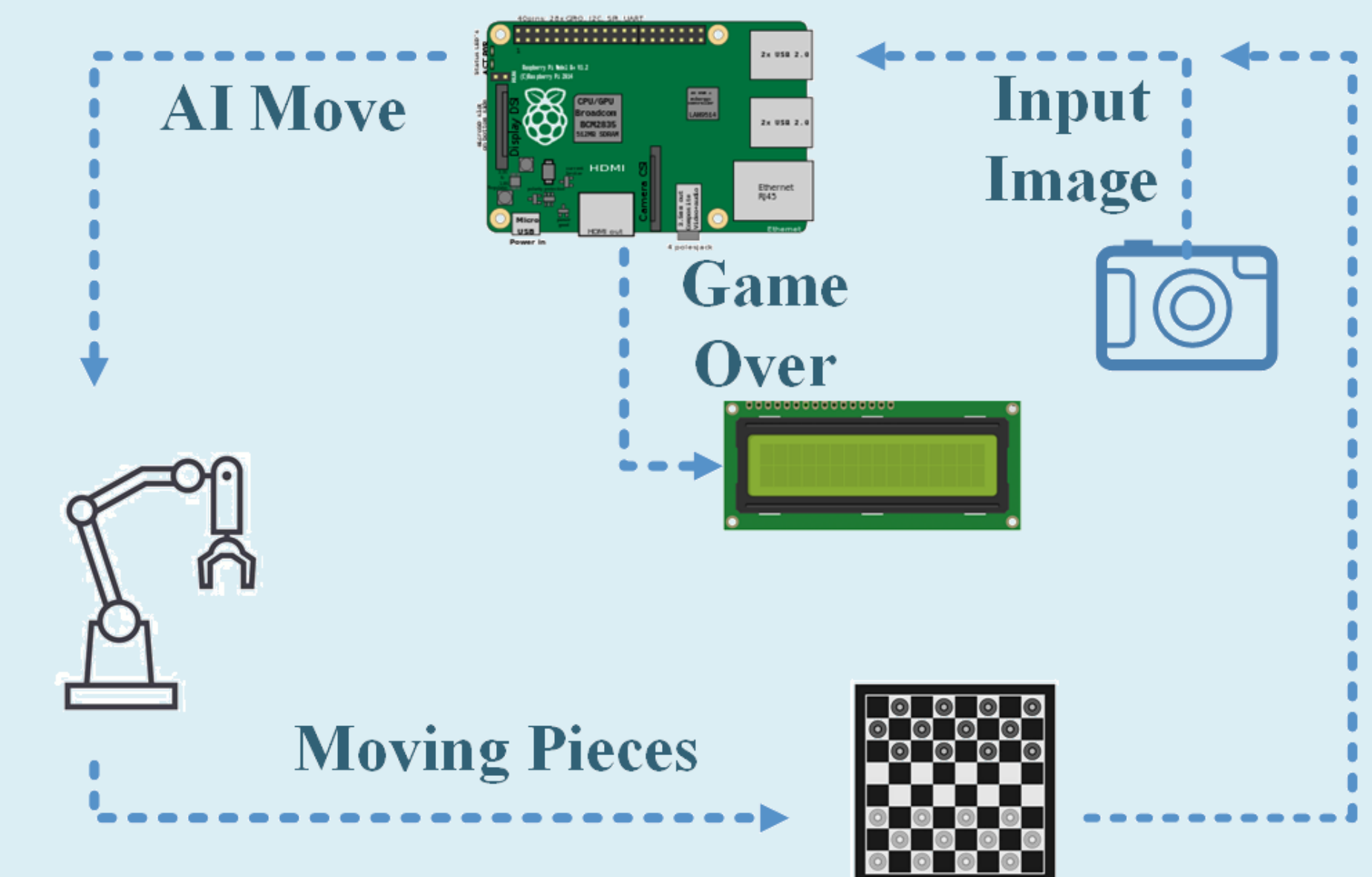


0 → Empty  
1 → Black  
2 → Red

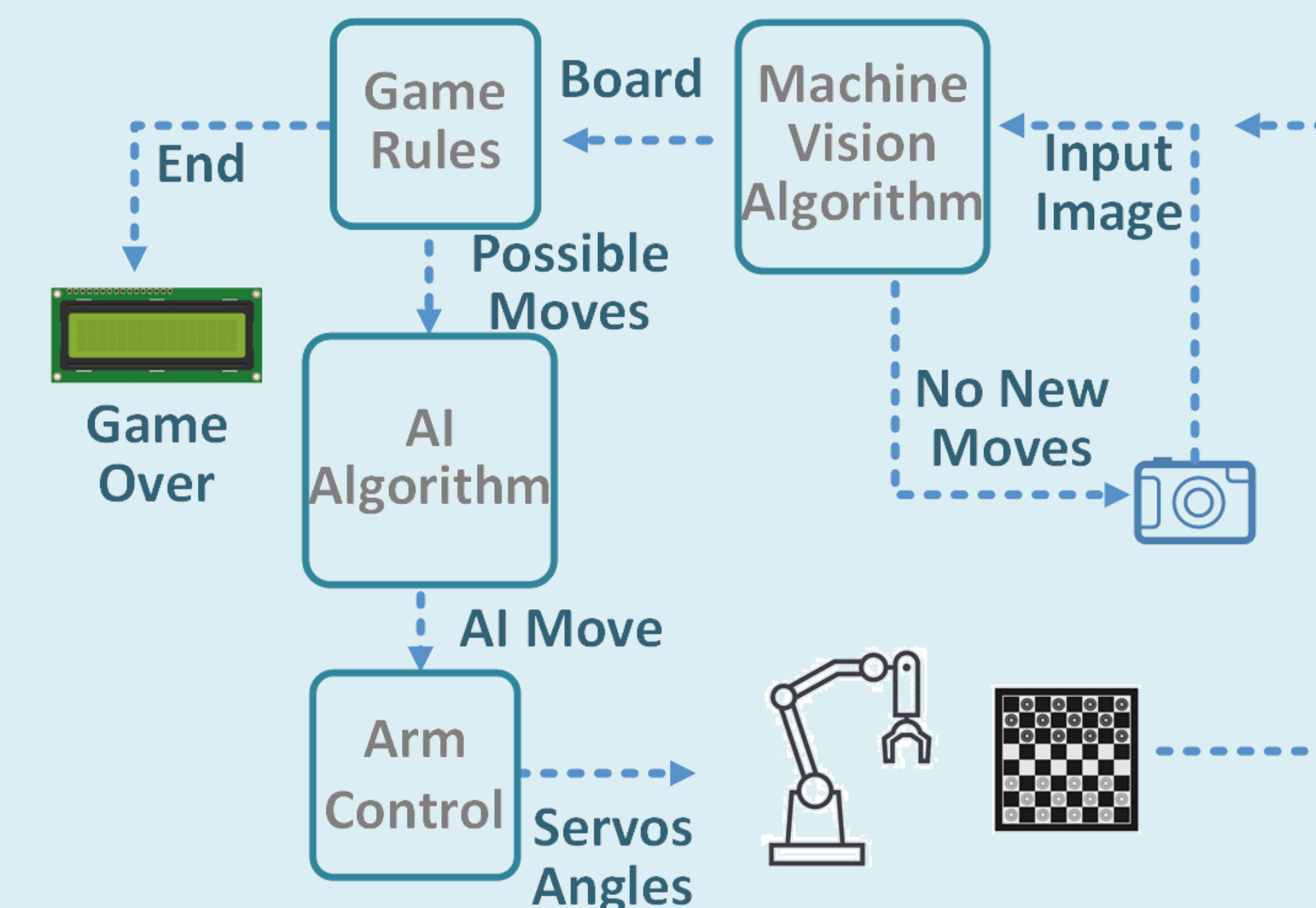
0	0	0	0	0	1	0	0
0	0	1	0	0	0	0	0
0	0	0	1	0	0	0	0
0	0	0	0	0	0	1	0
0	0	2	0	0	0	0	0
0	0	0	2	0	2	0	0
2	0	0	0	0	0	0	0

- Implemented an algorithm to generate all possible moves for the AI player.
- Designed the robotic arm.

## Diagrams



Hardware High-Level Diagram



Software High-Level Diagram

