

# **Final Project Customer Requirements**

## **Chess**

An autonomous system is desired that can determine the types of chess pieces on a given game board, along with the side, and the pieces location. The system must be able to move a particular piece based on a user input after determining the validity of the move. Additionally, depending on whether on the offensive or defensive, the system must be able to check the opposition king or move their own king away from a checked position. The system must also be able to determine the “best” move from a given chess game scenario. Finally, after every move, the system must hit a button connected to a load cell to stop the chess game clock.

All user interactions must occur from a Graphical User Interface, and the system designed must be quiet, efficient, fast, safe, and user-friendly, with smooth and (closed-loop) controlled motion for at least one axis of moving components. The teams will be provided with a DC motor with an encoder, a camera, a linear amplifier, and DC power supply.