Load Balancing Robot

Princess Sumaya جامعـــة
University الأميـــرة سميّـــة
for Technology للتكنولوجيا

EE 22701 - Embedded Systems Design Spring 2024

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Outlines

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01 Introduction

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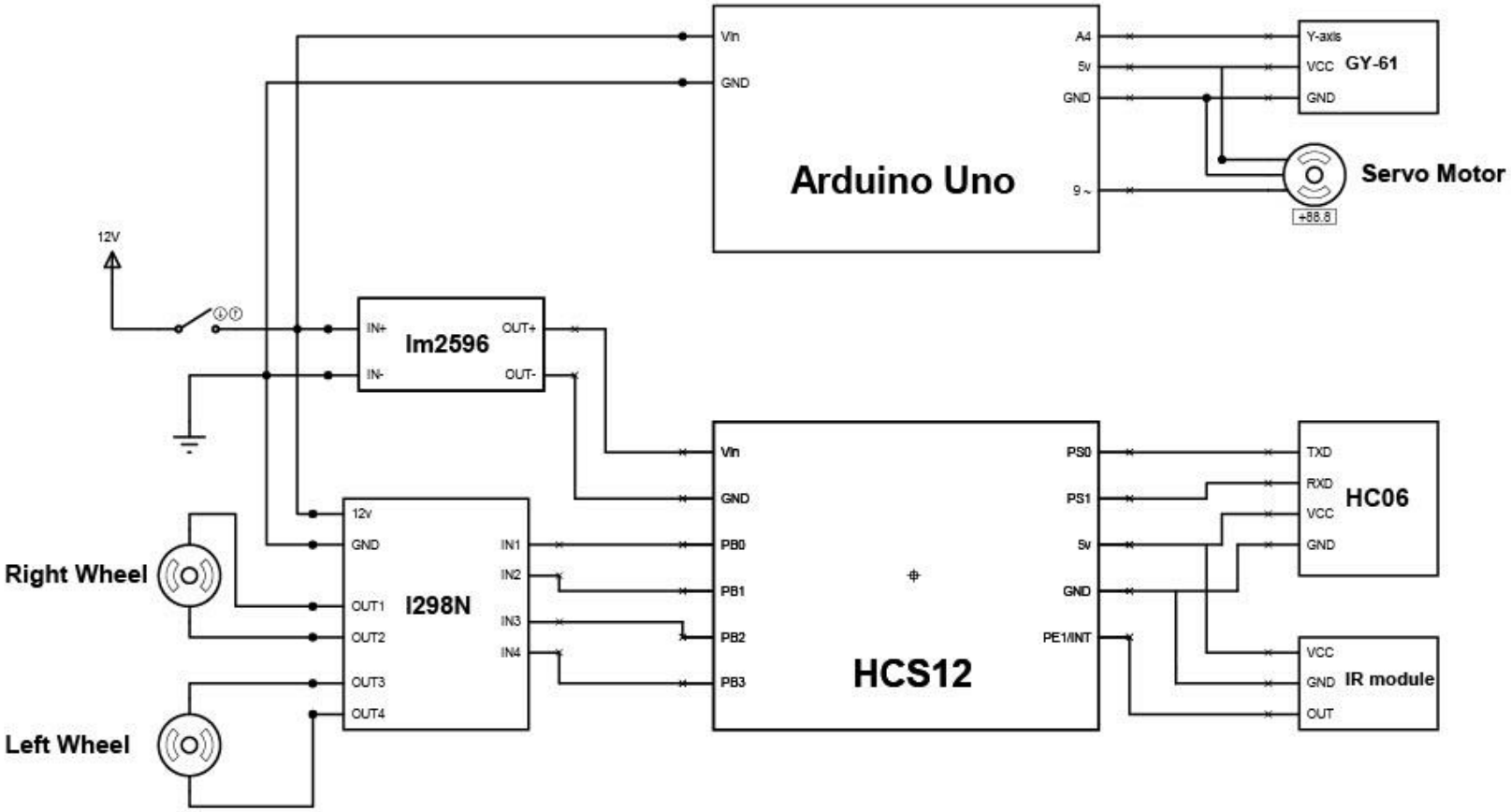
A load-balancing robot is designed to maintain equilibrium while carrying a load or traversing uneven terrain.

These robots are equipped with sensors and control systems to detect changes in their orientation and adjust their movements to keep the load balanced.

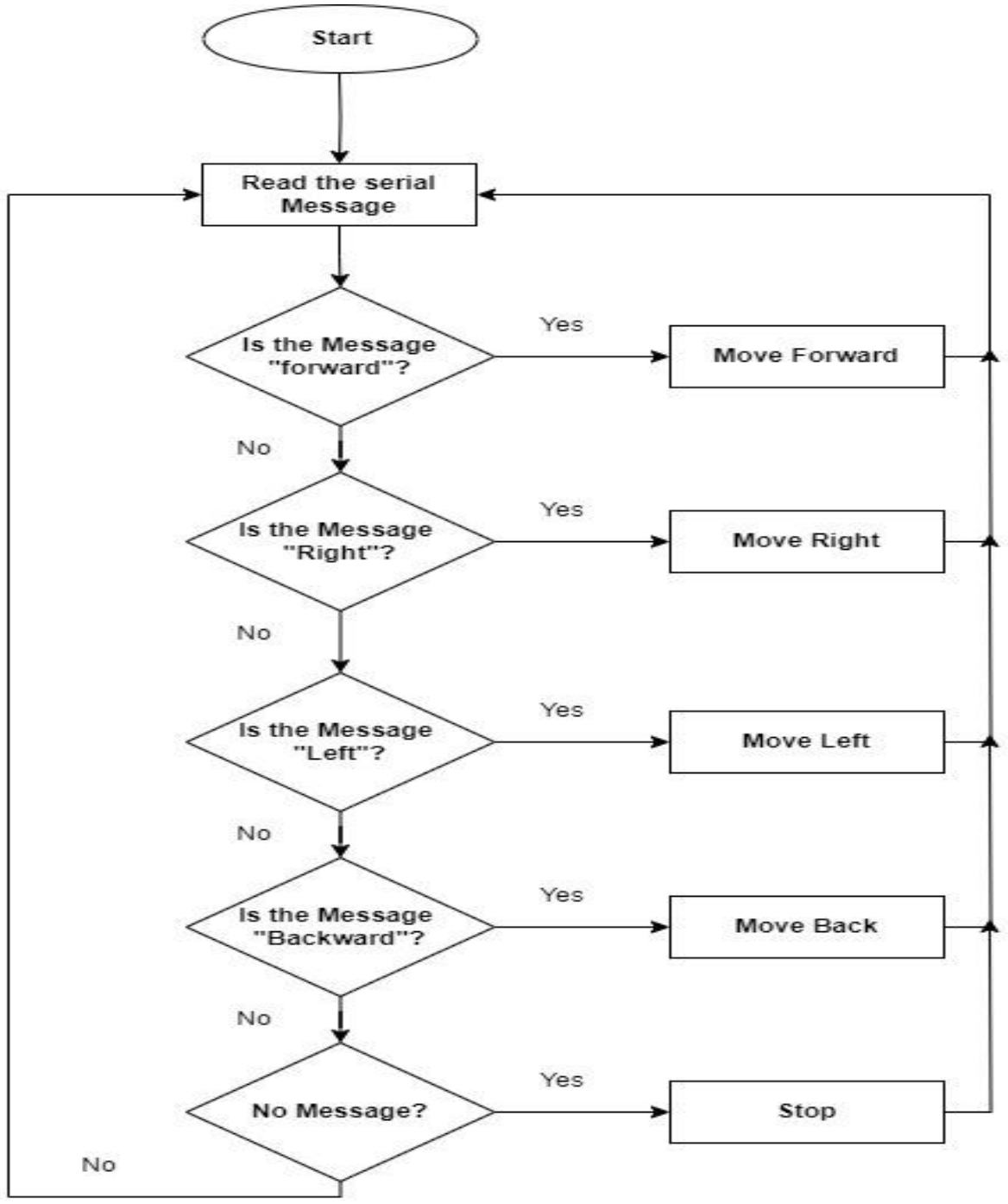
Load-balancing robots represent a remarkable fusion of mechanical engineering, control theory, and robotics.

02 Hardware Design



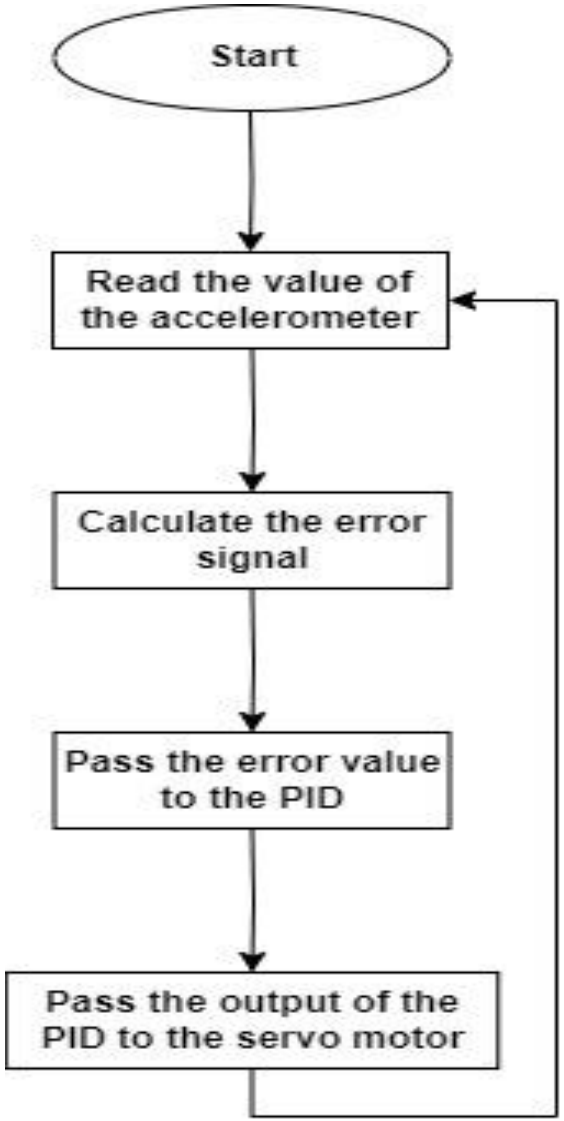
03 Software Design

1- software design of HSC12



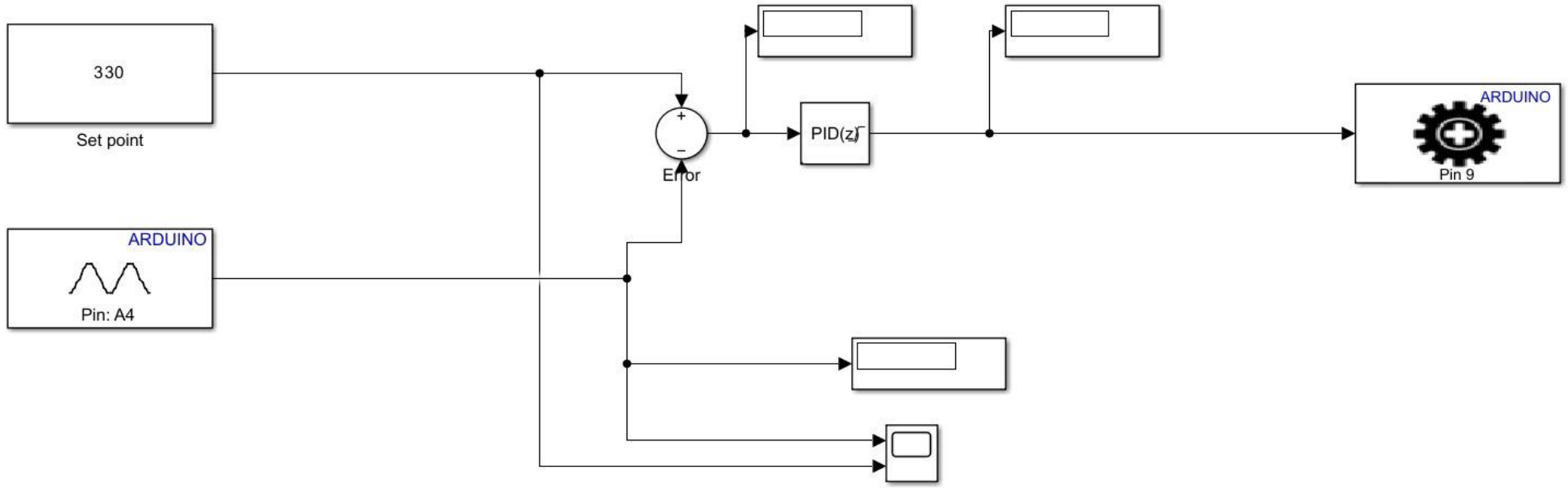
03 Software Design

2- MATLAB block diagram

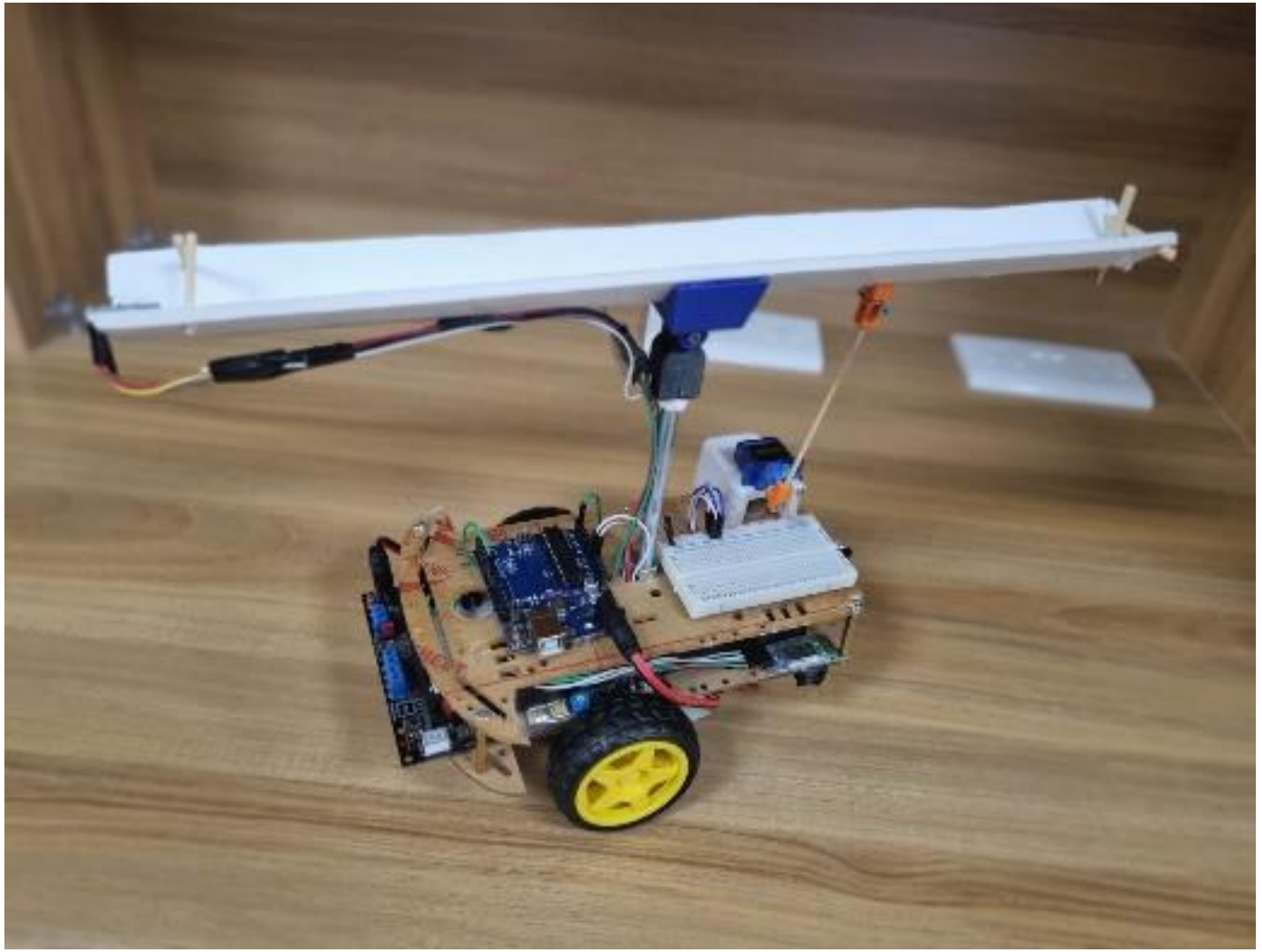


03 Software Design

3- Design load balancing by MATLAB



04 Final Project



05 Conclusion

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A load-balancing robot can balance and stabilize its load under any circumstances, making it an essential application in transportation.

Self-balancing applications are widely popular and useful in scooters or other moving wheels, such as self-balancing trays, racks, or anything else.

This project could be upgraded to be self-balanced on two axes instead of just one for future work.


Thank You