MASLAB – Robotics | 2015

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Objectives

Mobile **A**utonomous **S**ystems **LaB**oratory (MASLAB) is a robotics class offered during MIT's winter intersession (IAP)

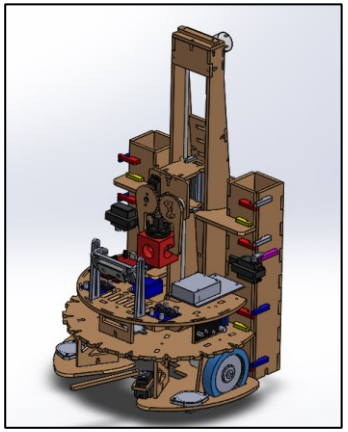
It is a month-long event the culminates in single-elimination competition of 10 teams where robots face off autonomously head to head

As the **mechanical lead** of my 5-member team my job was to design the mechanical systems on the robot

Proof of Concept

The robot was designed in SolidWorks and included all parts of the design, including electrical components and parts for the wiring harness

The design used **rapid prototyping** materials and equipment including laser cutting and 3D printing



Approach

The mechanical design of the robot was complete **early** in the competition in order to allow time for software testing of the computer vision (CV) autonomous aspects of the robot

After the first version, we continued to iterate on the mechanical design as potential improvements became clear rom testing. These included:

- **Collecting mechanism** – use a funnel to more effectively capture blocks
- **Centering mechanism** – use a cone to center in a circular hole for better accuracy

Results

During the final competition our robot was able to autonomously stack blocks and place in the top 5