

LAR@MSL – M.E.S. 2025



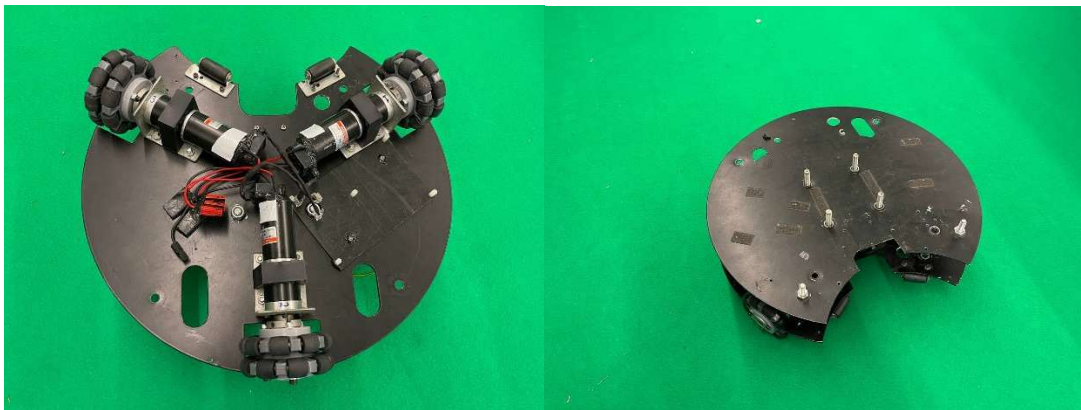
Robot Overview



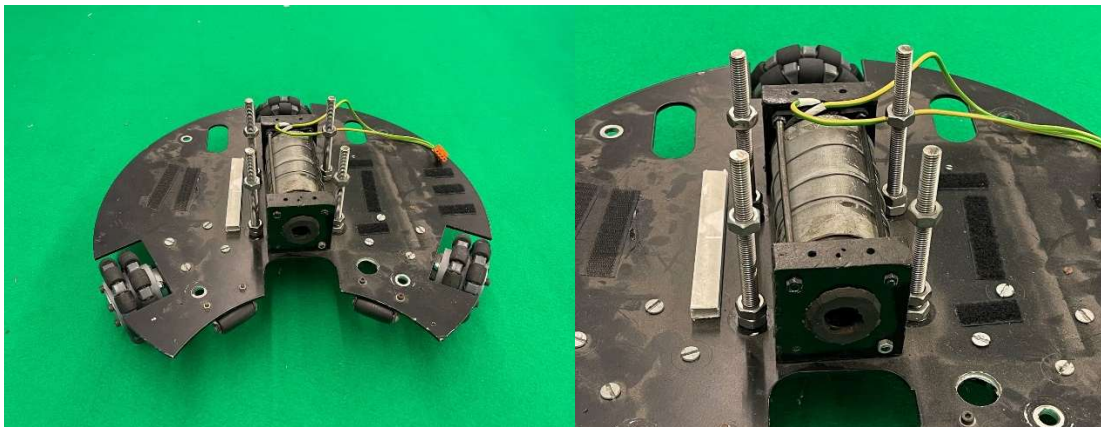
Mechanical Schematic

Mechanical schematics play a crucial role in the design and construction of complex systems, including robotics. In the case of a football robot, mechanical schematics are essential to understanding the various components that make up the robot and how they work together.

We start off with a 3-omniWheel Base controlled by the OMNI3MD-Max.



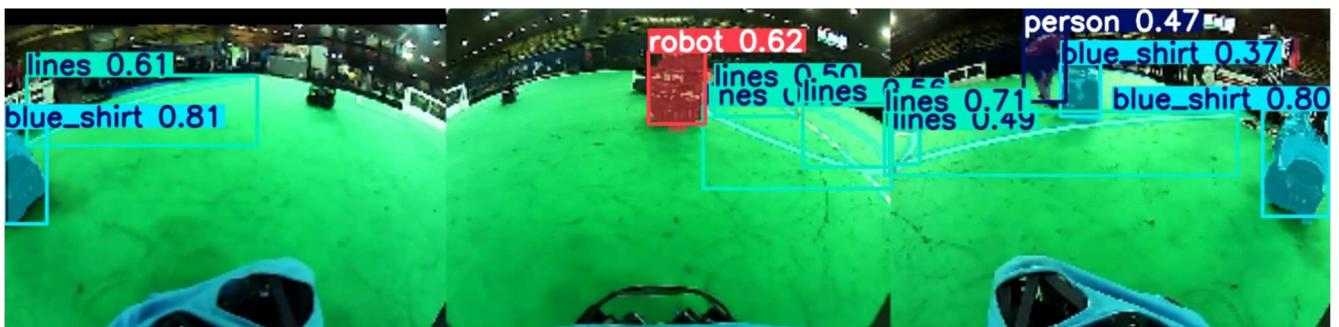
We start to add the Kick components, the kicking mechanism.



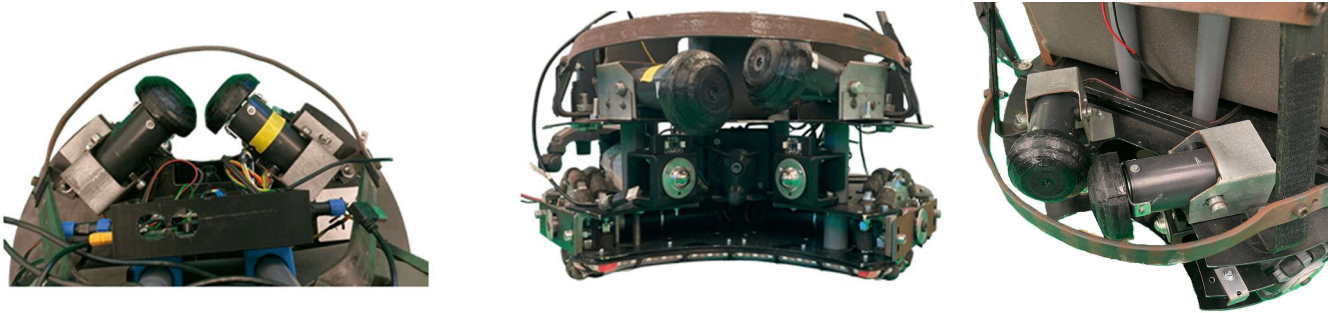
The next part is the support for the computers and its protection. Also here is visible the Main screws to give height where the camera will be attached.



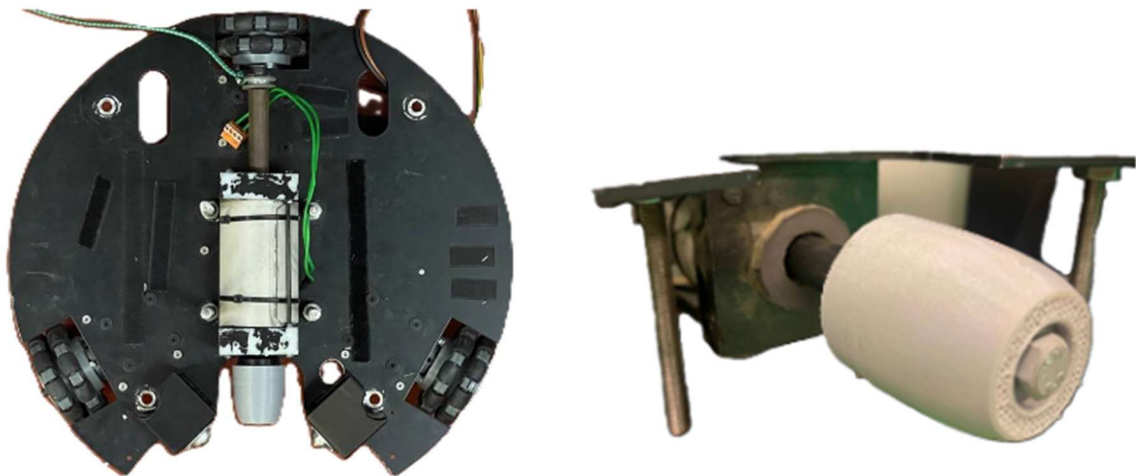
Some new tests using 2 120° FOV cameras are being made with the following head setup and what the cameras see.



Here is visible the dribbler mechanism with its Rollers to help the ball on lateral movements.

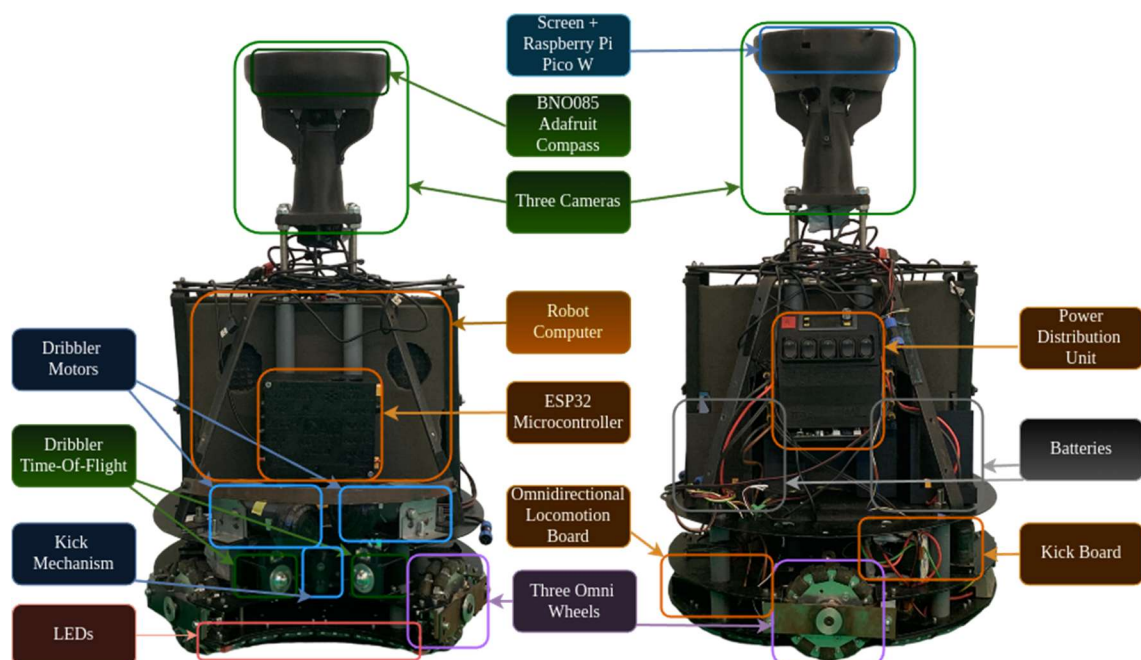


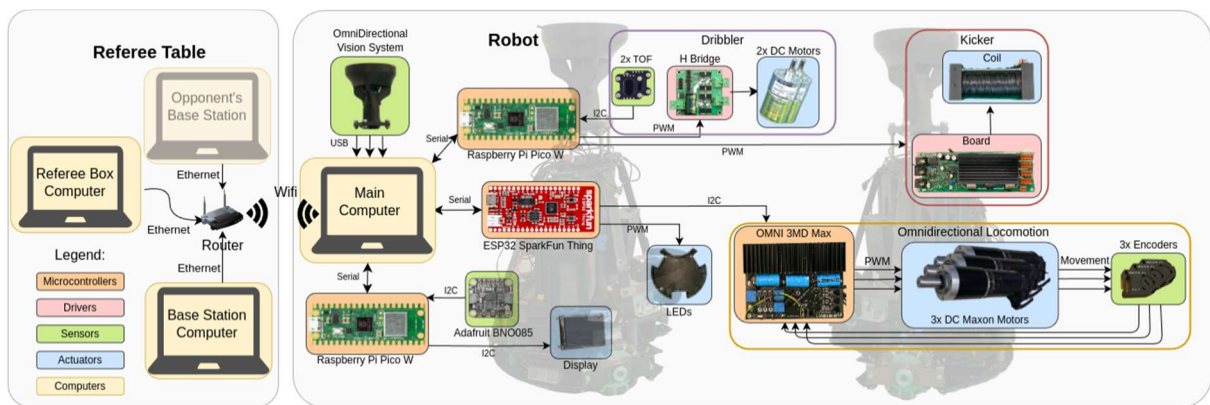
Kicking Mechanism



Electrical Schematic

In addition to the mechanical schematics, the electronic schematics of a football robot are equally crucial to its design and functionality. These schematics serve as a blueprint for the electrical system of the robot.

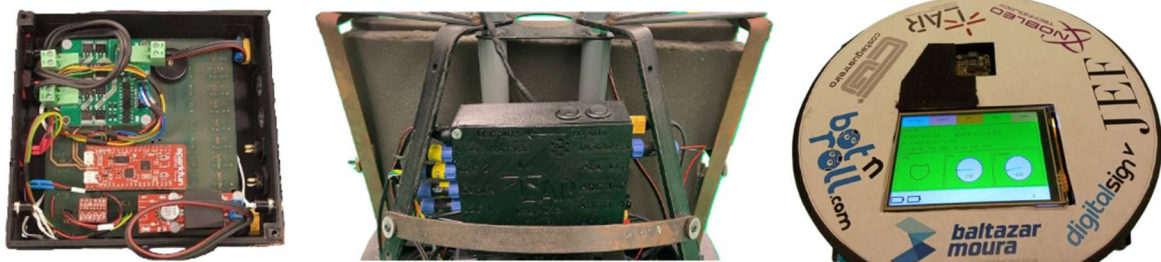


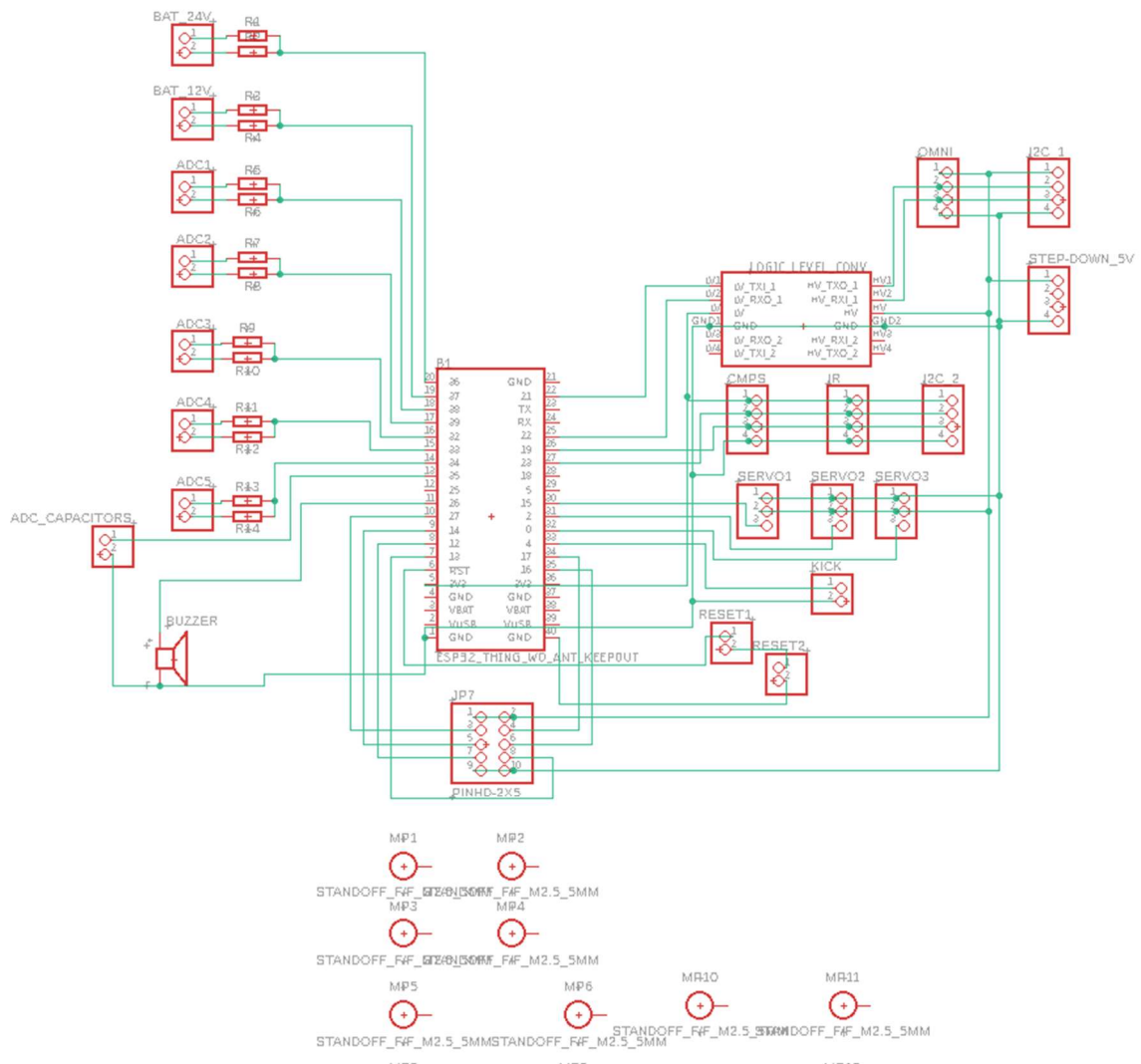


Lithium-ion 24V Batteries



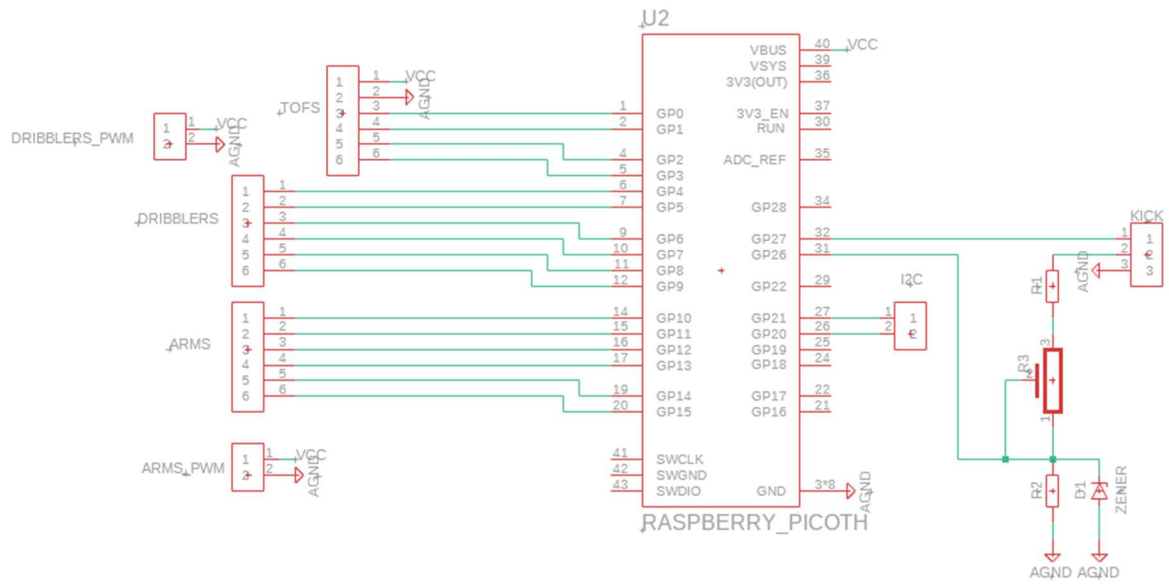
ESP32 Controller Board



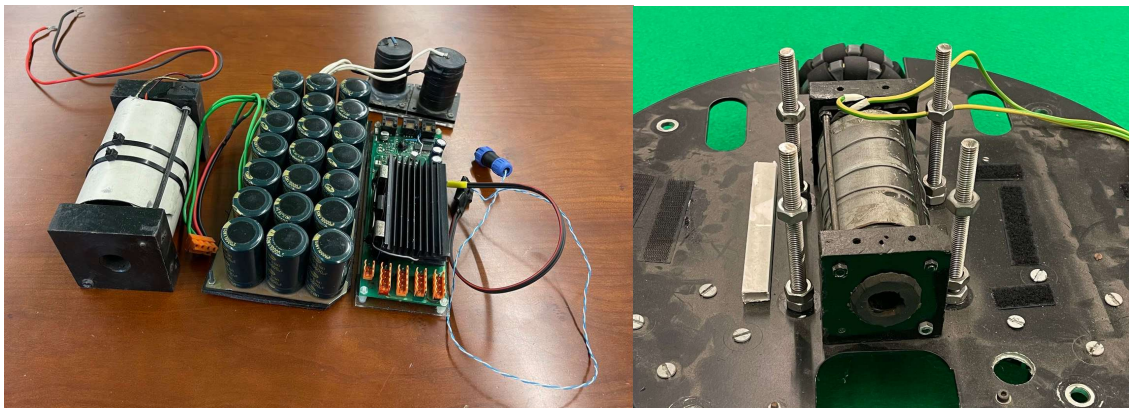


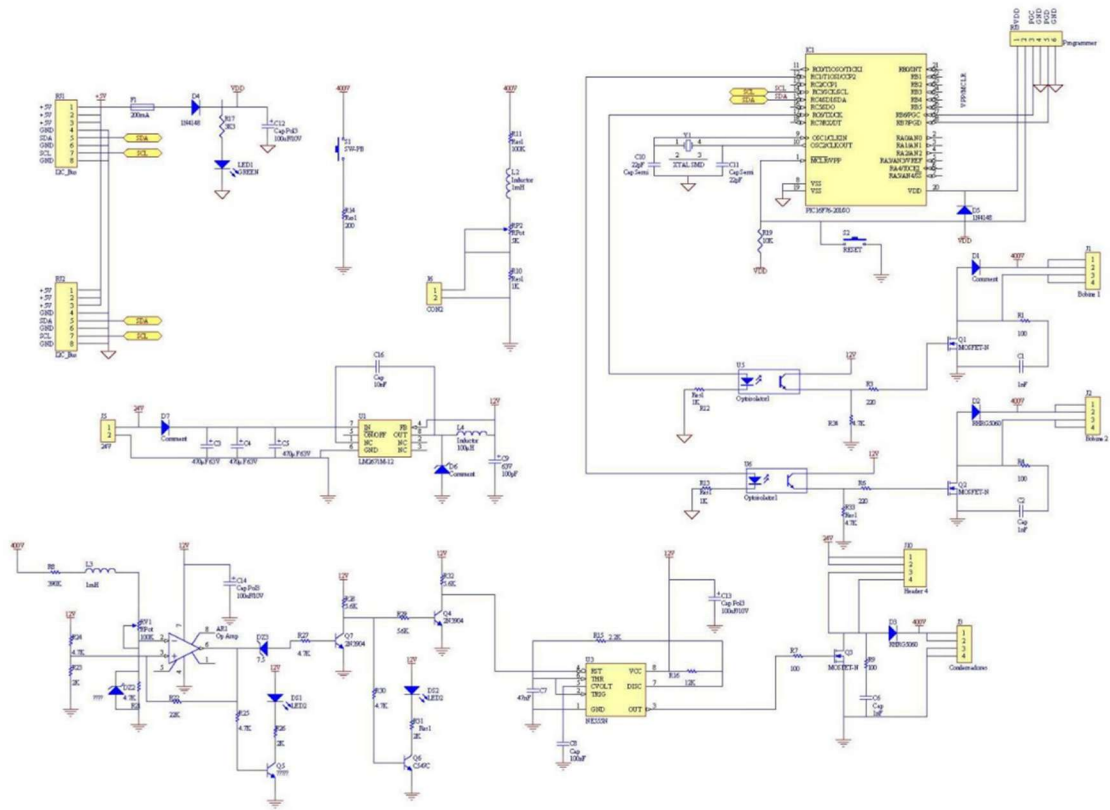
Pi Pico Low



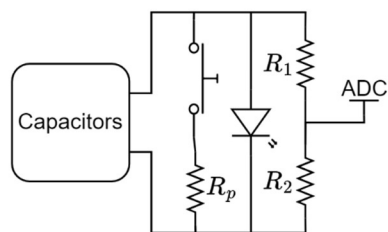
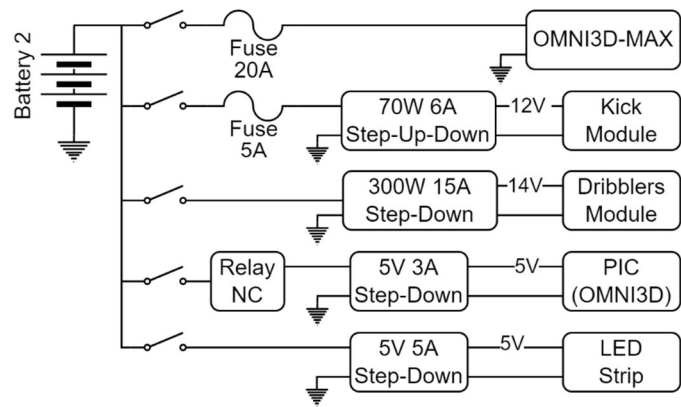
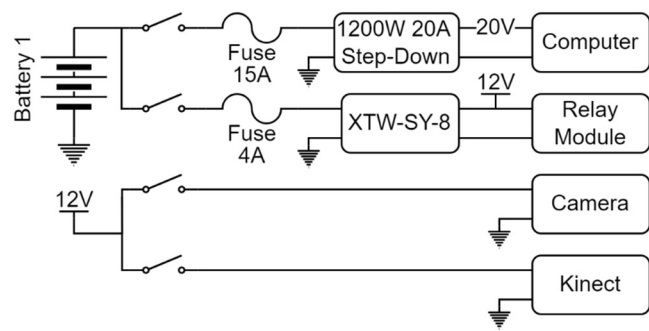


Kicker

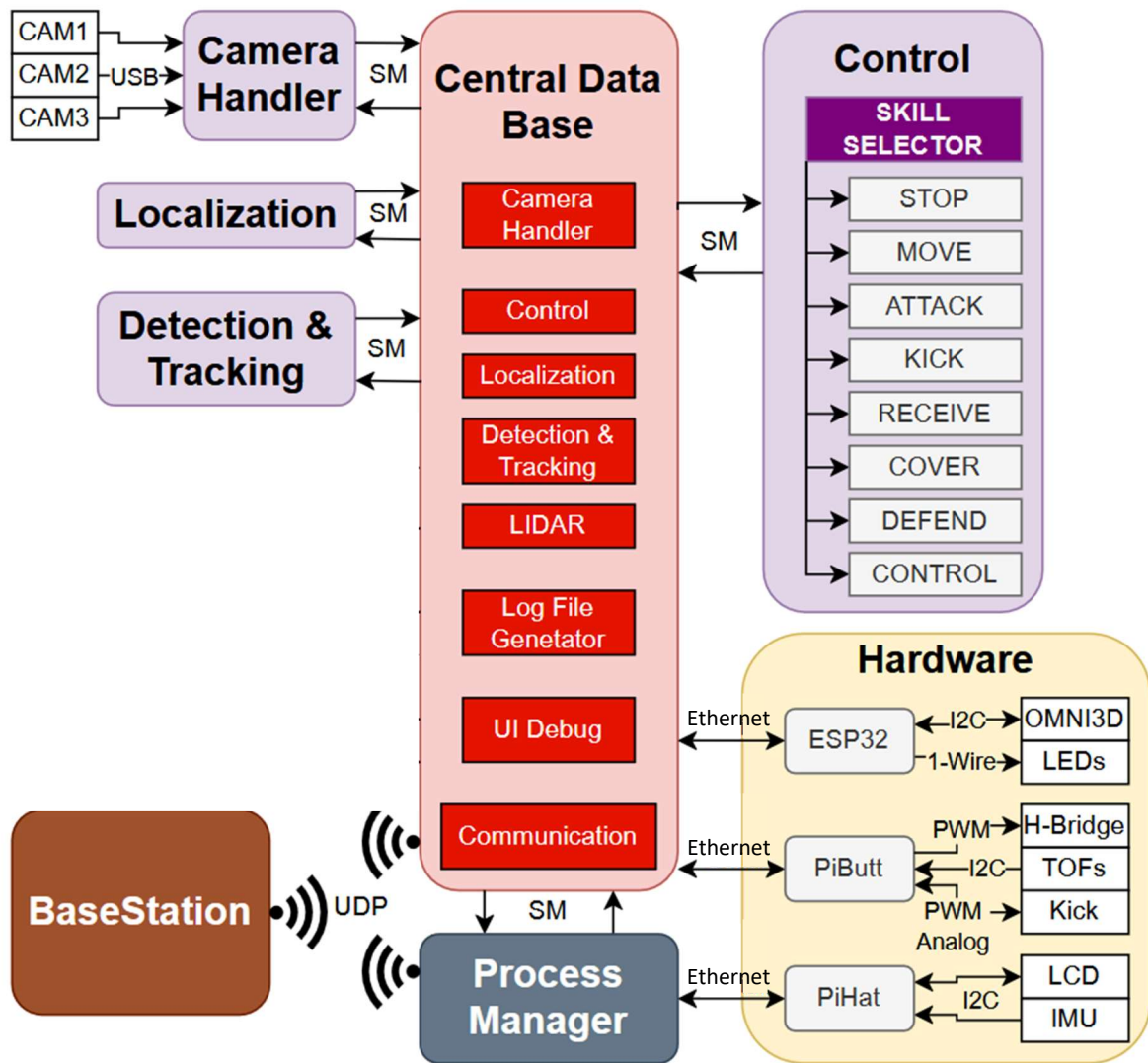




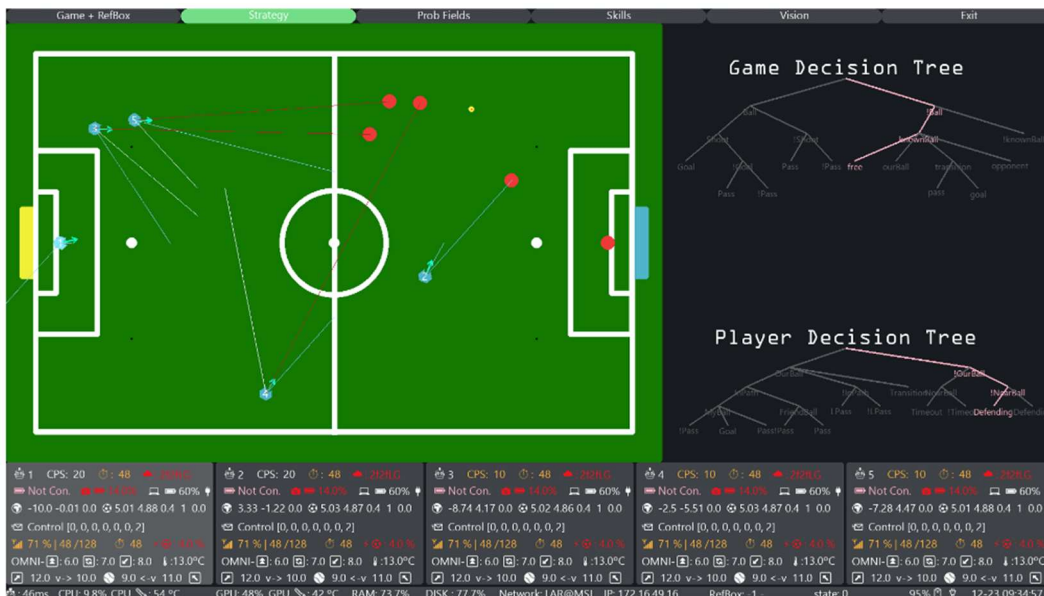
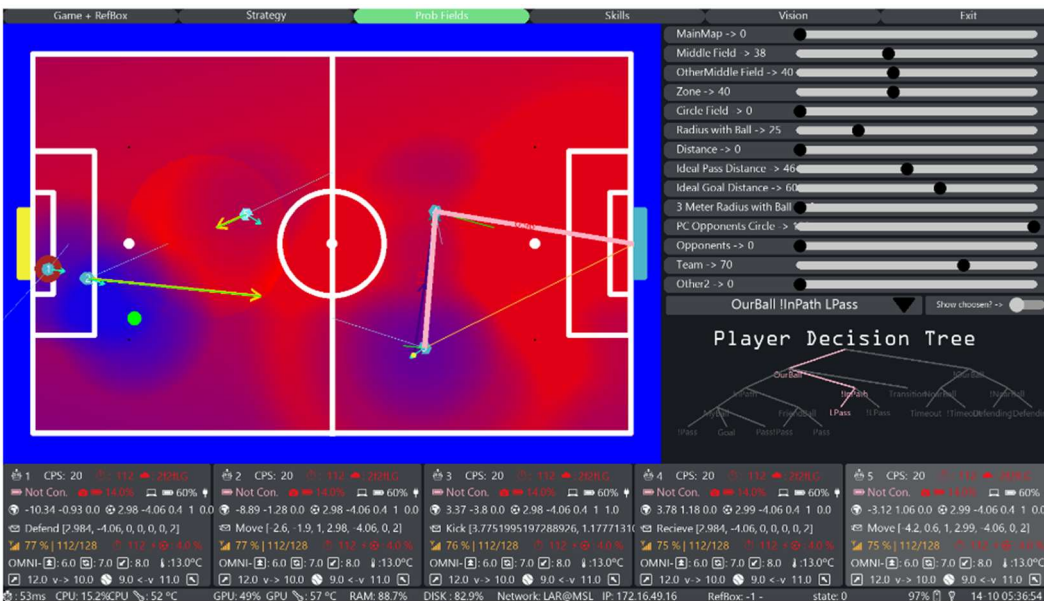
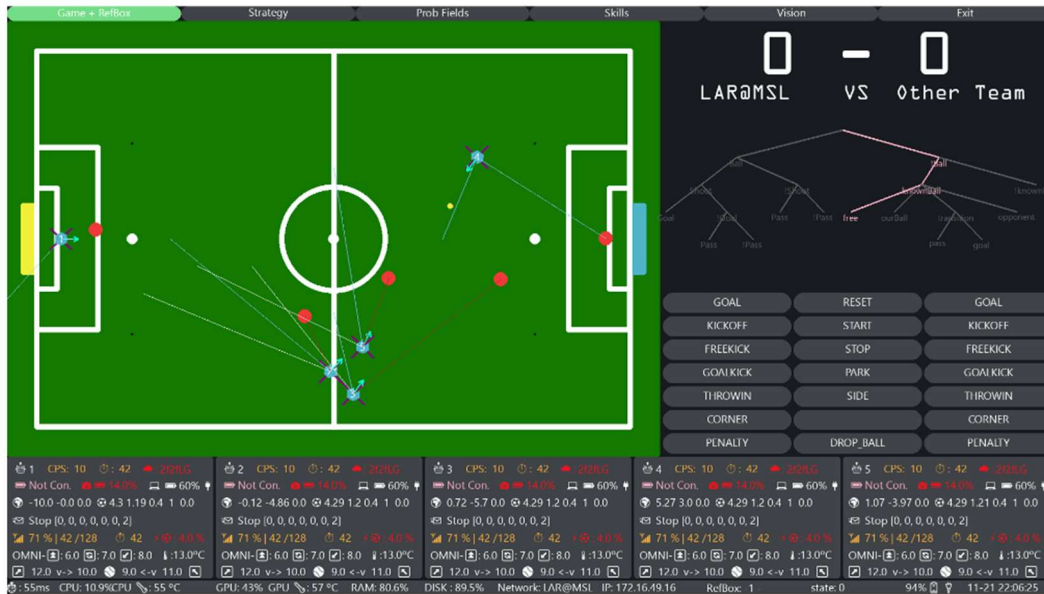
Power Box



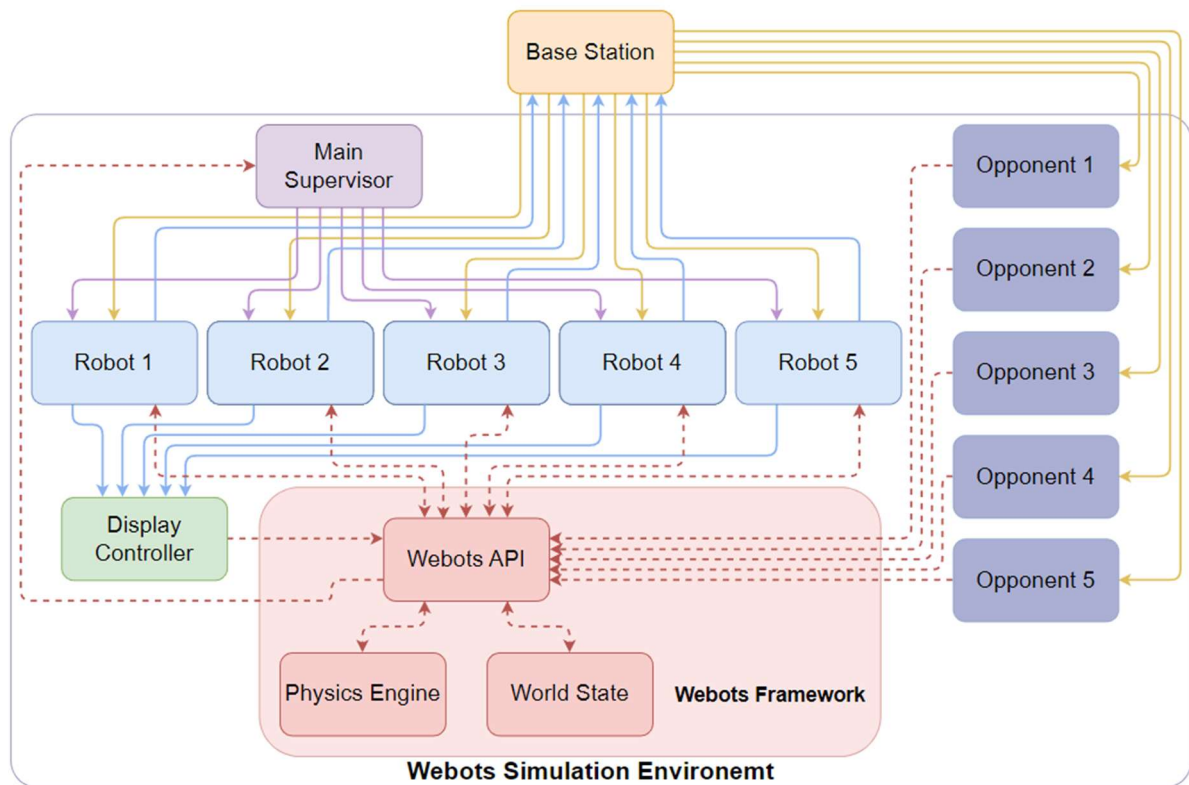
Software Schematic



Base Station UI



Simulator Architecture



Base Station Architecture

