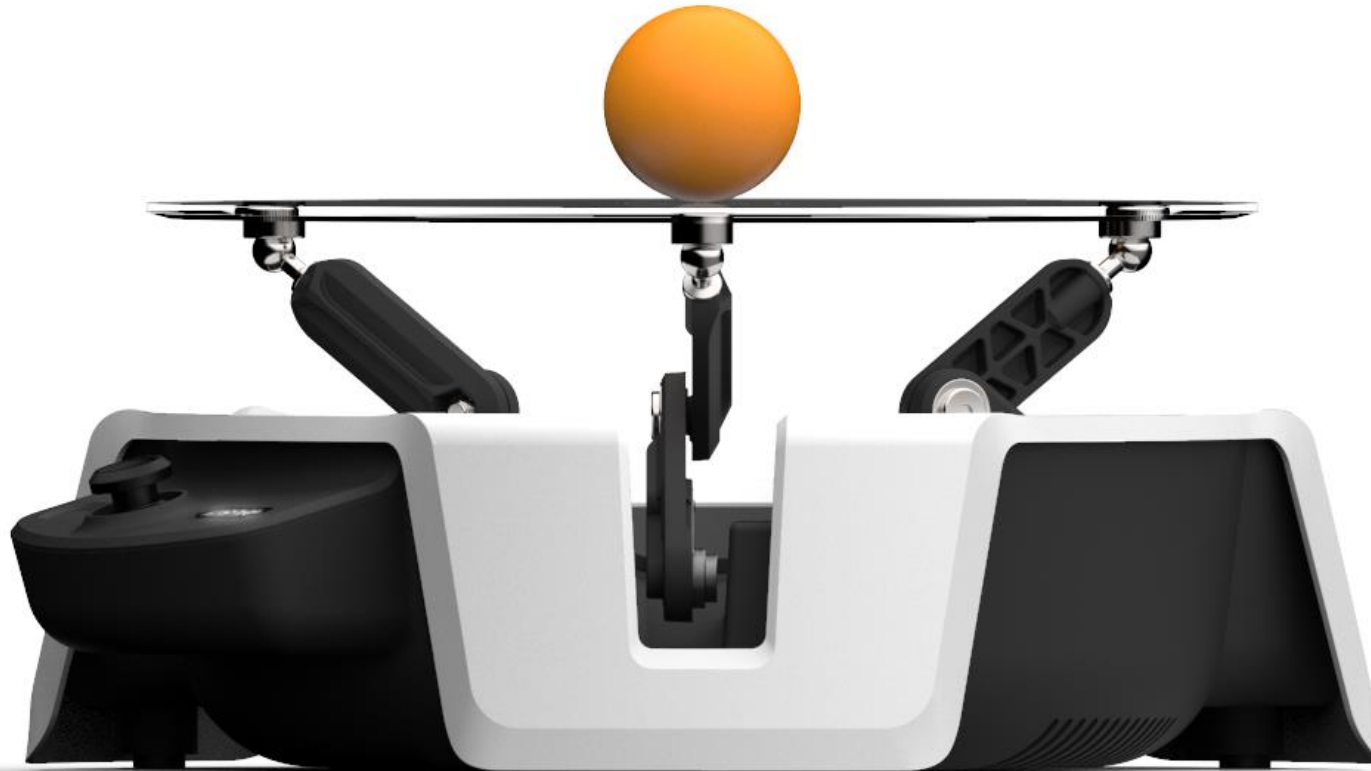# Moab

Open-source balancing robot to help engineers and developers
learn how to build real-world autonomous control systems

FAQs

Is there a sim for Moab?
Yes, it is a physics-based sim written in Python.

How is the sim licensed?
MIT License: MIT License - Wikipedia

Is the sim a Gymnasium sim?
Yes, it is in the following repository: https://github.com/microsoft/moab-rl

What does Moab run on?
Raspberry Pi 4

What are the key components and features of Moab?
Camera Module
Raspberry Pi 4
Power & Control Board
UI Board
Control Arms
Servos

How easy is it to train and deploy an agent?
We have instructions on how to train agents using Stable Baselines3 and RLlib, as well as how to export and deploy the ONNX policy to the hardware: https://github.com/microsoft/moab-rl

How do you train it at scale?
On Microsoft Azure, you can use the following repository examples to train an RL agent at scale with RLlib: https://github.com/Azure/plato

Has there been any research done on the sim-to-real gap?
No, but there are instructions in the moab-rl repo on how to calibrate the physical device which helps with a lot of common issues.

Is there any published research that uses Moab?
Yes: https://arxiv.org/abs/2107.10390

Is there support offered for Moab?
There is no hardware or software support or warranty offered.
For hardware issues, you may find help tips here:
https://github.com/microsoft/moab-rl/blob/main/docs/MoabTroubleshootingDoc.pdf
For issues with the moab-rl repo, please open a Github Issue:
https://github.com/microsoft/moab-rl/issues