

\$501 BOUNTY

The Background:

We are making hoverboards that have cameras on them and drive around autonomously. Right now we just take the motors off the hoverboards, and put [VESC Motor Controllers](#) so that we can control them from Python. The problem is these are really expensive.

We want a lower cost solution to control them programmable. The reason this is non-trivial is because we need low speed control that is very smooth, so we can balance the robot. Most speed controllers are designed for high speed control. Ideally we would also want torque control, instead of just velocity control. But currently velocity control is manageable.

The Bounty:

Find a solution below \$50 to do low speed (below 5 deg/s) torque or velocity control on a hoverboard motor.

Things to try first:

1. Using the original hoverboard controller itself. Obviously, hoverboard balance well out of the box using their premade controller, so it's possible. The problem is it runs some Chinese firmware and it only takes in control input from the pressure pads. We need to be able to control it from Python. Some people have hacked these controllers and have been able to control them, I havnt tried this, but its likely the easiest and cheapest path to completing this, give it a try first! (Something like <https://github.com/EFeru/hoverboard-firmware-hack-FOC>)
2. The ODESC4.2 is a single motor driver that is a clone of the ODrive3.6. They are really cheap and should be able to do really good low speed torque control. I have many at my house. I ran into a few issues trying to set it up but im confident if someone spent a few more hours they could probably get it to work. Basically this one should actually work out of the box if we learn how to configure it right.
3. I bought two [Tinymovr R5.3](#) to try out. They have an official video of [it driving a hoverboard motor](#) so it really should be easy to get it to work, I also have not had time to test it but I can supply them. These are above \$50 but I already have them and want to see if they are good.

If interested please contact me on X (<https://x.com/sincethestudy>)