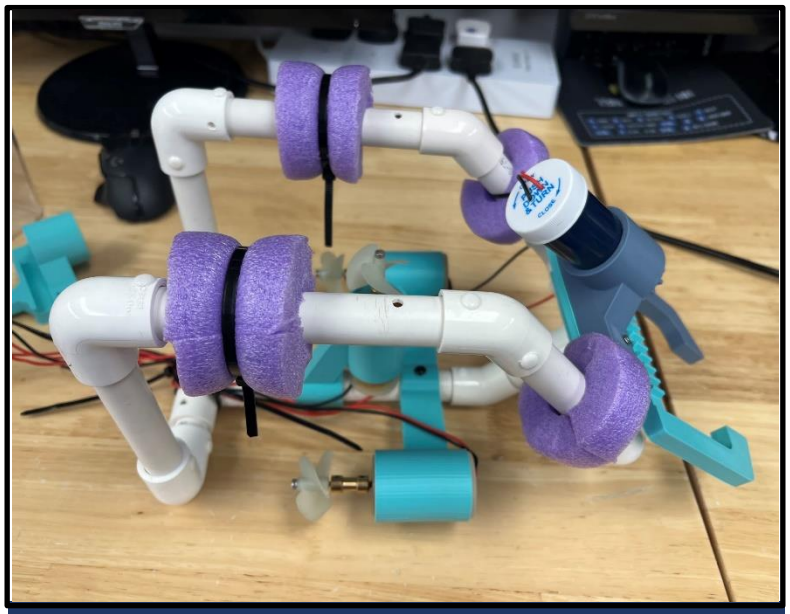
RoboReversal

Pui Ching Middle School, Macau, China



HIGH SCHOOL STOCK

1 Years participating in SeaPerch

1 Times at the International SeaPerch Challenge

Our SeaPerch is unique because: (100 words MAX)

- **Frame:** The front part of our Seaperch is inclined, Reduce the resistance of the water as it moves forward, allowing it to move forward faster, also enhancing the robot's overall stability.
- **Buoyancy System:** We added some pool noodles to the tether and Bobo's frame to counteract their gravity and buoyancy, so as to reduce Bobo's workload.
- **Electronic Manipulator:** Featuring the efficient utilization of a rack and pinion mechanism for seamless movement. One finger of the manipulator is fixed on the bottom while the other one moves with the rack. This design is not only convenient but is also stable.

SeaPerch Design Overview: (100 words MAX)

Our frame design is based on a design found on YouTube, and we have made some improvements to enhance the robot's stability and its ability to move smoothly underwater. To achieve this, we have equipped our seaperch with three thrusters: one for vertical movement and two for horizontal movement. These thrusters are securely fixed on the fuselage using two separate 3D-printed support frames. Additionally, we have installed pool noodles on Bobo to offset its gravity and buoyancy. Lastly, we've created an electronic manipulator that employs a rack-and-pinion mechanism for precise movement. This design ensures both stability and ease of control.

Our biggest takeaway this season is: (100 words MAX)

- Effective teamwork and communication: By allocating time and working efficiently, we realized that collaboration and communication are crucial to completing our Seaperch. In addition to expressing our ideas and suggestions, listening to teammates' input and feedback can significantly enhance team collaboration.
- Continuous learning and skill acquisition: All 3 team members learned to use 3D modeling software such as 'Onshape'. We also gained many practical skills while making control boxes, such as soldering and shunting of circuits. This experience inspires us for our future learning and work.