Campus Clean Up

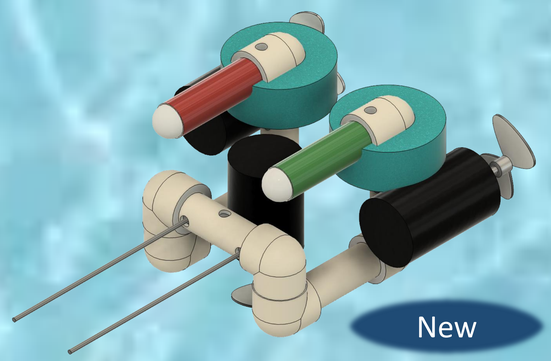
Sandalwood Sunfish- Sandalwood Highschool - Jacksonville, Florida - USA

Abstract

The Sandalwood pool remains ill-kept throughout the school year. Due to the nature of the robotics club, it is important the pool stays litter free so it can be used not only by us but other groups in need of the water space. Why not use the skill learned to use the teams ROV to keep the pool tidy?

Background & Motivation

As the fall and winter months pass, the pool is left unattended. The pool is free for the school to use during the school year. This access to the pool allows the Sandalwood High School sea perch club to practice. The lack of maintenance on the pool means trash and leaf litter has filled the pool and made it hard to use. The group set out to clean the pool.



Acknowledgments

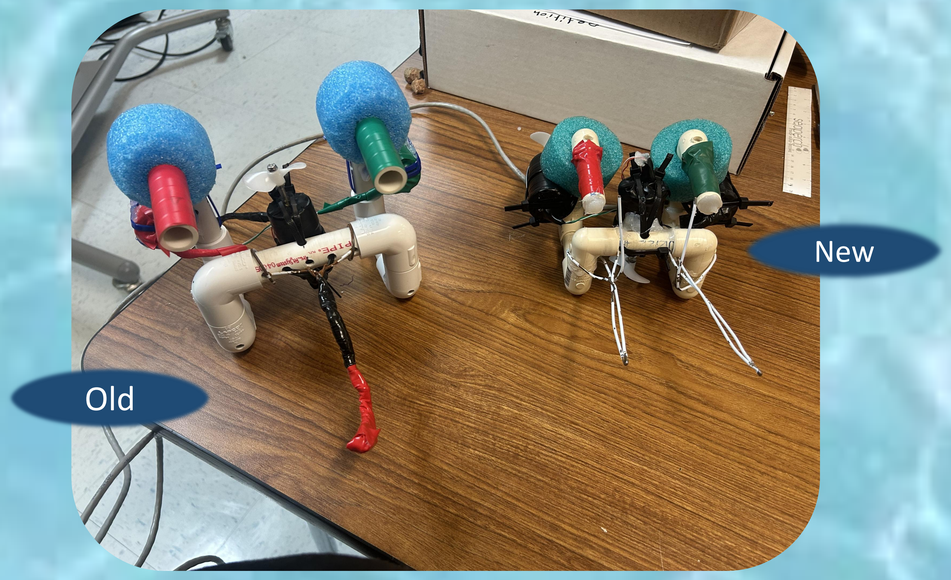
We wish to thank Duval County for use of the pool for testing our Seaperch vehicles.

Results, Discussion & Conclusion

With a little practice the team's ROV was able to successfully pull the trash and litter to the edge of the pool where it can then be picked up by a team members. The size of the pool works to the team's advantage as the smaller size means the driver of the ROV has less distance to travel to take the debris to an edge. It is also helpful as there is only so much length on the tether. A net would have been the most effective way to achieve the goal of cleaning the trash. The team was limited by the dual purpose needs the ROV needed to accomplish. We found that a better option would be to have a removable net to attach to the existing double hooks. This would allow the design to be functional when used to compete while keeping it available when getting pool debris.

Methodology

The team is also competing with this particular ROVt so the changes made had to work not only to clean the pool but, to pick the items in the mission course too. The original design was a rod with a larger tip at the end. This worked great for pushing items but, when working with things like aluminum bags, its not very effective. On the original design the problem was the ROV only had one point it could catch the litter onto. This allowed any slight currant from the motor to dislodge to trash from off the hook. To counteract this issue, the team changed the design to have two curved rods coming from the base of the ROV. The two bent rods allowed a more stable catch between the litter and the hooks. Another issue the team faced was the smaller size of the updated ROV. This meant the two option (on or off) controller no longer allowed any kind of accuracy when catching items. The dual hooks did help as it gave more potential contact points.



Next Steps

Moving forward, it would be best to have two ROVs that each complete their own purpose rather than confiding both responsibilities to one ROV. Having more time to focus on just one objective for each ROV will allow for the team a better shot at true success.