

# OCTOCLEANER





# PROBLEM STATEMENT

Rainfall and agricultural runoff contain not only water, but also trash such as plastic, leaves, and muck. Rainfall and agricultural runoff pollute rivers and lakes, causing sedimentation and pollution.

Sedimentation occurs when garbage and muck collect at the bottom of rivers, reducing the water capacity of rivers and lakes over time. It can't hold a lot of water. As a result, floods occur. (Floods can occur even if there is less rain.) It's one of the factors that contribute to flooding. The waste also pollutes the water supply.

# EXISTING SOLUTION

Name of the product	Jenny	Eco Six Packs Ring	The Toothpaste Pill	Ocean Clean up system
Image				
Price	Costs nearly 6 to 7 US cents per unit screen.	Costs nearly 10 and 15 US cents per 2 screens.	Costs nearly 7 US cents per unit.	Costs nearly 12 to 15 US cents per 3 screens.
Maximum Depth it can clean	Cleans upto 1.8meters from the starting point of waste.	Cleans upto 2.2 metres from the starting point of the waste.	Cleans upto 3.6 metres from the starting point of the waste.	Cleans up to 5.8 metres from the starting point of the waste.
Advantages	Cost is low compared to others.	It can clean 2 to 2.5 unit screens at a time.	Short device which is easily accessible.	It is accessible to clean 3 to 4 screens at a time.
Disadvantages	For one time it cleans only 1 unit screen.	Cost is high and sometimes the ring may get damaged.	Cost is comparatively high and it is not accessible to clean more than 1 unit screen.	Cost is too high which is non affordable.



## PROPOSED SOLUTION

OCTOCLEANER is an underwater robot that can go deep into the water and collect trash from within.



# INSPIRATION

- we are inspired by biomimicry in engineering. We took aquatic animals as inspiration.
- Aquatic animals have streamlined shapes.
- It reduces friction with the water.
- Fishes are known for their flexibility and octopuses for their grip.
- We use fish mechanisms for motion and octopus mechanisms for collecting trash.

# WORKING

- The front and back part of the robot moves in opposite directions for forwarding motion.
- The camera attached to it can give a live feed to the user.
- The robot detects the depth of the water body and then it goes near to the bed.
- The camera attached to it sends the pictures to a machine learning model, then it detects the trash and gives commands to collect it.
- Octopus hands like structure collect the trash and store it in the tank.
- Ultrasonic sensors detect the height of trash in the tank if it reaches the limit when it comes up.
- After reaching the surface the user can discharge the tank.

# **PROGRESS AND FUTURE STEPS**

**PROGRESS:** research work is completed. Now working on prototype development.

**FUTURE STEPS:** We intend to use this robot in the oceans as well, once we have the necessary resources and funding we will periodically update it with the most recent technology. we also include a mechanism to collect muck



“

**Because no matter who we are or where we come from, we're all entitled to the basic human rights of clean air to breathe, clean water to drink, and healthy land to call home. Martin Luther King III**

**-Martin Luther King III**

# **THANK YOU**

