Robot fish helps us experience the close-up of the ocean world

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Scientists at MIT's Computer Science and Artificial Intelligence Laboratory (CSAIL) have developed a robot fish that can swim like a real fish, allowing it to swim underwater and get closer to other creatures, helping us to explore the world of marine life more easily.

Although underwater robots are not new, they are often attached to boats or pushed underwater by powerful engines.

Known as SoFi, this soft robot fish has a superior, more independent approach. The exterior is made of silicon rubber and flexible plastic, inside is a lithium-polymer battery (usually for smartphones) to power the servomotor, which pumps water into two chambers like a balloon, Works like piston in the engine.

When one of the two chambers expands, the robot body bends to the side, a process that is repeated on the other side when the transmission pushes water into the opposite chamber. The result of this is the alternating motion on both sides that helps it mimic the action of a real fish and pushes it to swim in the water at a variable speed.

In order for SoFi to swim at different depths, the team equipped the two fins to be called mini dives on each side. This unit can adjust weight and control control to create a change of compressed air to change the position of the robot vertically when swimming in the water.

With a soft and moving shell that makes no noise makes SoFi ideal for observing other marine creatures without causing any disturbance. The team said fish robots that were tested in Fiji's Rainbow Reef, using a water-proof Super Nintendo controller, were fitted with an identification sensor to guide it to swim underwater and integrate cameras to take photos. and record high resolution videos about the surroundings.

Dr. Robert Katzschmann, lead author of the article describing the system, said: "To our knowledge, this is the first robot fish that can swim in three-dimensional space for a long time. We I'm very excited about the possibility of using it as a system that can come to marine life more than humans'.

From here, the team wants to continue to improve SoFi, allowing it to speed up domestic travel and even automatically track real fish.

CSAIL director, Daniela Rus, said: *"We see SoFi as the first step to develop a variety of other underwater observation systems. It has the potential to be a new kind of tool for ocean exploration and Open new paths to discover the mysteries of marine life ".*