

NUS research team creates first robotic fish in Asia that can function on its own

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(From left) Lab technologist Zhang Heng Wei, research fellow Ren Qinyuan and graduating electrical engineering student Fan Lupeng pose with different versions of the Robot Carp, which can be used in research for underwater archaeology. A team of National University of Singapore researchers has created the Robot Carp - the first robotic fish in Asia that can dive, float, and use its fins like a real fish. It can also be programmed to perform specific functions on its own. -- PHOTO: NATIONAL UNIVERSITY OF SINGAPORE

By Farah Mohd Ismail

A team of National University of Singapore researchers has created the Robot Carp - the first robotic fish in Asia that can dive, float, and use its fins like a real fish. It can also be programmed to perform specific functions on its own.

Unlike traditional underwater vehicles, it has the flexibility, shape and size of a fish, which enables it to access narrow spaces easily. This is particularly useful in research for underwater archaeology, where wreckage may be difficult for divers or machines to access, said researchers. Other potential applications include military activities or pipeline leakage detection, which may be too dangerous for humans to perform.

The team, from the Department of Electrical and Computer Engineering, is made up of graduating electrical engineering student Fan Lupeng, Professor Xu Jianxin and research fellow Ren Qinyuan. The Robot Carp was part of Mr Fan's final year project and won the High Achievement Award at the Engineering Faculty's 27th Innovation and Research Awards.

Currently, most robot fish can perform only two-dimensional movements, which means they are unable to dive and are limited to swimming at the water surface. While it has not been tested in an actual marine environment, the team hopes to make its robot fish even smaller and more realistic. Mr Fan added: "We intend to equip it with more sensors like GPS (Global Positioning System) and a video camera to improve autonomous 3-D movement. We also intend to test out our fish with more challenging tasks such as object detection."