

# Robotic fish in action at London Aquarium

6 October 2005



There may be a different fish to see for every day of the year at the London Aquarium at County Hall, but there's a new variety that has never swum any of the world's oceans. From 6 October the Aquarium's unique robotic fish will be swimming in a specially-designed tank, open to the public for the first time ever.

Three stunningly beautiful robotic fish have been created with jewel-bright scales and sinuous, astonishingly life-like movements. They have been produced by Professor Huosheng Hu and his human-centred robotics team of the Department of Computer Science at the University of Essex.

Professor Hu's team have been working with the London Aquarium for three years to develop a biologically inspired robotic fish which mimic the undulating movement of nature's fish species – aiming for the speed of the tuna; the acceleration of a pike, and the navigating skill of the eel.

The robotic fish have sensor-based controls and autonomous navigation capabilities – they can find their own way around the tank safely, avoiding the

objects, and react to their environment. The results of years of painstaking work can now be seen in freshwater tanks next to the London Aquarium's Atlantic tanks.

Professor Hu is an expert in the field of robotics and was the mastermind behind the Essex robotic football team who won the 3rd prize in the RoboCup simulation league in 1999. The robotics group at Essex is one of the largest in the UK and is at the cutting edge of research into human-centred robotics.

According to Professor Hu, the aim of the project is to bring the public in direct contact with robots, increasing their understanding of science and technology: 'This work has many real-world applications including seabed exploration, detecting leaks in oil pipelines, mine countermeasures, and improving the performance of underwater vehicles.'

The Aquarium's marine experts have worked with the robotics team to share their knowledge of the behaviour and movement of a wide variety of fish, and have provided the facilities within the Aquarium for the robotics team to study many species in great detail.

'Our robotic fish are really wonderful to look at and very entertaining. It's amazing how beautiful and graceful their movements are – they're going to be incredibly popular with our visitors,' Foster Archer, Director of the London Aquarium said.

Source: University of Essex

APA citation: Robotic fish in action at London Aquarium (2005, October 6) retrieved 21 January 2022 from <https://phys.org/news/2005-10-robotic-fish-action-london-aquarium.html>

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