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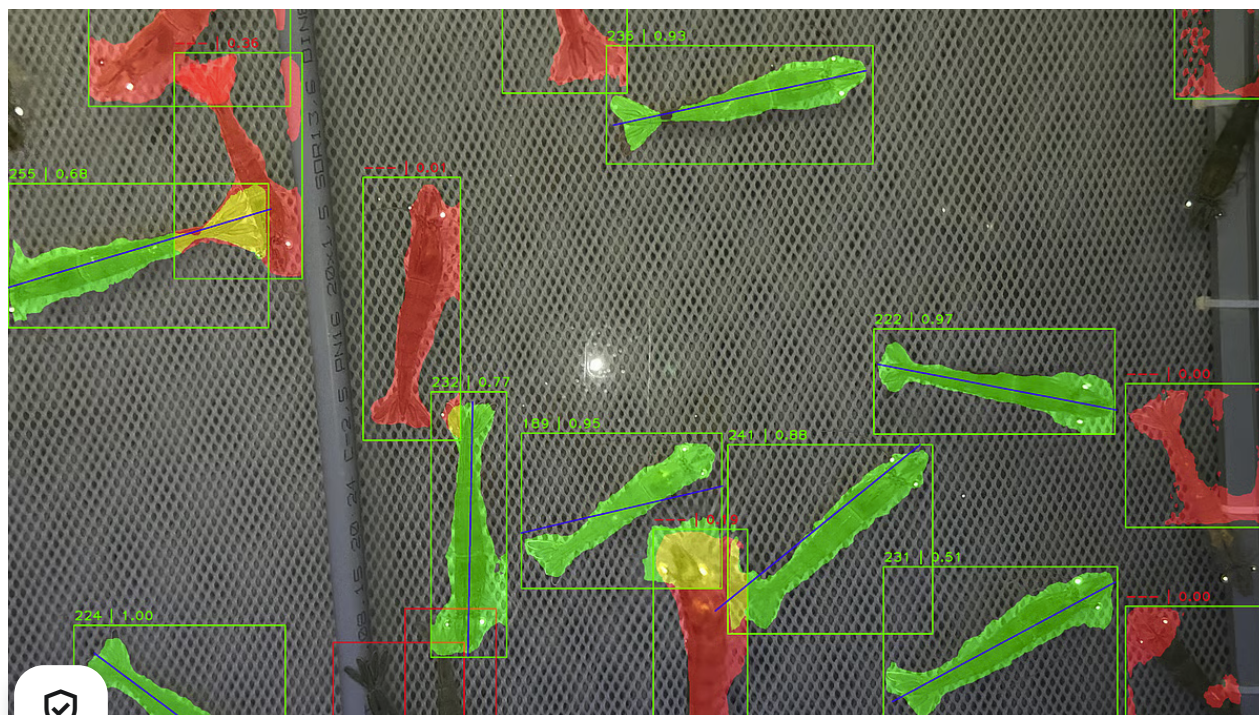
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German partnership harnesses AI tech for better animal welfare in shrimp farming

The ShrimpWiz project, led by the Alfred Wegener Institute in partnership with Oceanloop, uses computer vision to automatically examine and care for shrimp cultivated in indoor facilities.



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FOOD (BLE), under an innovation funding program.

Photo: Oceanloop



Louisa Gairn

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A German collaborative project has come up with an AI solution to support sustainable indoor shrimp farming in Europe.

The ShrimpWiz project, led by marine research organisation the [Alfred Wegener Institute](#) (AWI) in partnership with [Oceanloop](#), an aquaculture technology company with two land-based shrimp RAS farms in Munich and Kiel, [Germany](#), is using machine vision to enhance animal welfare and efficiency in indoor shrimp farming.

"In [shrimp](#) farming, operators must regularly remove the animals from the water to weigh them and check their condition. However, this causes stress and reduces animal welfare. It is also almost impossible to detect symptoms of stress or disease, as turbidity, even under optimal light conditions, often limits in-situ observation," the partners state in a press release detailing the project.

The project addresses these issues by employing AI-based computer vision technology, which can count shrimp and measure their length with 95% accuracy under real-world farming conditions, without the need for invasive handling. This approach also allows for the detection of stress indicators and other visual health markers.

Non-invasive, real-time monitoring

The project's prototype system has been tested at Oceanloop's research facility in Kiel, Germany. Using a smartphone positioned above the water surface, the system captures images of shrimp once per minute. These images are then analysed by computer vision algorithms to count the shrimp and measure their length.



The partners say that Oceanloop's clear water RAS enables the technology to function effectively, as turbidity is not a limiting factor. They also argue that their approach supports verified best practices in [animal welfare](#).

"The use of computer vision software to measure shrimp enables accurate and non-invasive monitoring of animal welfare and productivity in shrimp farming – 24 hours a day, 7 days a week," said **Dr Stephan Ende**, coordinator of the project at the AWI. "The clear water technology combined with our Early Welfare Alert software can be the starting point for more objective welfare labelling in the shrimp industry of tomorrow."

"Non-invasive, real-time monitoring of key farming parameters such as growth, feed conversion, survival and stress will make a crucial contribution to a better understanding of shrimp farming. To better understand the needs of our shrimp, we can use these economically important indicators to develop an artificial neural network that takes into account all available farm data, which can easily add up to more than a hundred," added **Dr Bert Wecker**, CTO of Oceanloop.

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