Designing the Prototype Aquatic Rescue Robot Based on the Biomimicry of the Istiophorus (sailfish)

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Abstract

The goal of this project is to develop a robotic prototype capable of swimming at high speeds, which can be used for rescue and/or ocean research. We would separate its specific characteristics by attempting to use to a large extent the shape of the movement of the sailfish, which has as a characteristic the shape of a dart when moving at high-speed thanks also to its lack of scales that make its coefficient of friction with water is minimal. Located in the belly of the robotic prototype, which also has degrees of freedom in its neck and fins, this will allow it to go up and down without using human force, adding comfort and stability when performing deep-water rescue operations.

Keywords
Rescue, Ocean, Robotic-Prototype, Sailfish.

Biographies

Bernabé Oscco, a mechatronic engineering student at Ricardo Palma University, was born in Lima, Peru, in 2002.He has knowledge of MATLAB, Visual Studio, Inventor Professional, and Advanced Excel. I am fluent in advanced English. His research interests include biomedical technology, nanotechnology, and artificial intelligence.

Jose Mayorga, a student of mechatronic engineering at the Ricardo Palma University, was born in 2003 in Lima, Peru. He has knowledge of Visual Studio, Inventor, AutoCAD, and SolidWorks. I speak English (intermediate) and French (basic). His research interests include biomedical technology, robotics, artificial intelligence, and advanced programming.

Victor Cuyotupac, born in 2002 in Lima, Peru, is a student of the VI cycle of mechatronic engineering at the Ricardo Palma University, has an intermediate command of the English language, knowledge of Inventor, MATLAB, and Excel, knowledge of AutoCAD, SolidWorks, and Visual Studio, programs in Python and C++, and has an interest in the medical approach to engineering. He is a finalist in the Engineering with a Purpose contest at the Peruvian University of Applied Sciences.

Leonardo Macetas, born in 2002, is a student of the VI cycle of the Professional School of Mechatronics Engineering at Ricardo Palma University. He is fluent in English. Among the main programs he handles are AutoCAD, Inventor, and MATLAB. His interests are in the areas of home automation, building automation, and machine automation.

Mario Chauca is an engineer with an MBA and a doctorate, as well as a project development advisor and professor at Ricardo Palma University. He motivates students for leadership and entrepreneurship in engineering projects and for writing and developing research articles.