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Computer model of a smart sub-sea robot using neuro-fuzzy to improve performance

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Life on Earth started from the sea and forcibly or voluntarily humans has long been associated with it. With the rapid progress of information technology and intelligent systems, access to the deep seas and oceans is done more easily. In parallel with the development of the theory of neural networks, fuzzy or fuzzy logic theory emerged. As we know, the real world requires the application of intelligent systems to solve complex problems. In robotics, every day is a new approach achieved for various applications in the areas of space, sea and land. With proper modeling of the robot, the robot can do the same thing that is expected of our simulation and unknown strange and unknown seabed have access. Performance evaluation system is done in two method, modeling and simulation as one of the most efficient methods of modeling approach is considered. Smart robots need to have the proper path along the way. In addition to precision routing, non-functional characteristics such as response time are also considered. In the current research using neural network and Mamdani fuzzy system for robot the right path recognized. Effective factors are identifying in routing underwater robot as input to the neural network and the ability of the robot to be considered. Formation of the linguistic variables used in Mamdani system. Effective parameters in undersea robot are used in fuzzy system. Mamdani fuzzy rules resulting from the system resulting in increased accuracy and efficiency. With regard to the uncertainty on the parameters have been identified, the proposed approach provides better accuracy compared with previous works. In controlling and stability the Sub-Sea Robot, The effect of Ekman depth and spiral also hydrodynamic pressure and using of sea column energy for Robot motion are very important. Robots can sink about 1025 meters depth to check the oil and gas sea bed systems and environmental research. Bathymetry, sampling of sediment, marine heritage tracing and biology research are very important for such unmanned systems. In this research, by introducing a new high-tech Sub-Sea Smart Robot by Neural and fuzzy Methods, we understand new Techniques of complexity of such systems. In many applications, Sub-Sea Robots needs to be flexible to any given depth, properties of sea waters, hydrodynamics forces and used energy .Tracing of a special Path-lines in sea waters for Robots and stability the balance of geometry are important. Controlling and guiding the Robot to special points of Sea bed is a must. In this research, using fuzzy systems and neural network intelligent routing an undersea robot is analyzed and optimized.