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INTELLIGENT SYSTEM FOR TESTING ROBOTIC COMPLEXES USING SIGMA-PI NEURAL NETWORKS

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Abstract. The paper considers the problem of developing an intelligent testing system for robotic systems based on sigma-pi neural networks. On production lines where industrial robots are used, the task of testing them for performance is urgent. There are two main ways to solve this problem: routine checks of robotic systems or constant observation of the operator at the robotic line. This paper presents an intelligent system built on the basis of sigma-pi neural networks, which will be able to solve a similar problem using readings from sensors located at different nodes of the robot. A neural network trained according to the algorithm considered in the work can continuously monitor the state of robots on the production line and make a decision to stop the line in case of suspicion of a breakdown. As an example of the operation of a sigma-pi neural network in this work, an example is provided based on 5 input data, that is, data from 5 sensors, normalized according to the principle "there is a signal" or "there is no signal".

Keywords: sigma-pi neural networks, control problem, intelligent testing, robotic systems, neurocontrol

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