

DIAGNOSTIC TECHNIQUE FOR A ROBOTIC COMPLEX USING LOGICAL NEURAL NETWORKS

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Abstract. An intelligent method for diagnosing the state of a robotic complex, as a complex system consisting of many active interacting subsystems, should have not only a set of logical rules established on the basis of practice, but also have the ability to generalize and classify input information, that is, to identify implicit (hidden) patterns. The logical neural network meets the requirements for the diagnostic system. The basis for its structure is a variable-valued logical function. In this work, a method for the formation of a structure of logic neural network, corresponding to the qualities of variable-valued logical functions is proposed. Such a logical neural network has additional properties necessary for solving problems of diagnostics and pattern recognition.

Keywords: robotic complex, intelligent diagnostic system, logical coding of object properties, production rule, logical calculations, neural network approach, fuzzy logical statement

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