

Название публикации:

On Correlation between Information Analytical System Structures of Situation Centers and Multi-Layer Selective Neural Networks

Авторы:

Mikryukov, A., Mazurov, M.

Plekhanov Russian University of Economics, Stremyanny per., 36, Moscow, 117997, Russian Federation

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Аннотация:

The present paper considers the issues of application of multi-layer selective neural networks for building up the models in information analytical systems of situation centers. It shows the equivalence of architecture of operation processes in the information analytical systems of situation center to the structure of multi-layer neural network with "deep" learning. Applicability of selective neural networks as a part of situation center information analytical system for solving the tasks of image recognition, situation classification and prediction, etc. has been substantiated here. Special features of selective neural network building and operating allow considerably reducing the complexity of neural network designing in order to solve a specific task, scope of calculations, as well as reliability of execution of prescribed functions. No-need for using the weighing factors (weights of synaptic connections) for assessing the significance of input signals and using the significant input signal as classifiers is the advantage of selective neural networks in comparison with well-known ones based on McCulloch-Pitts neurons. © 2018 The Authors. Published by Elsevier B.V.

Ключевые слова:

Analytical systems, McCulloch-Pitts, Operation process, Situation centers, Specific tasks, Synaptic connections