# Use of artificial neural networks for estimating diagnostic parameters in biomedical images

*N.Y. Ilyasova[1,2], D.Y. Lipka[2], A.V. Kupriyanov [1,2]*
*[1] Image Processing Systems Institute of RAS*
*[2] Samara State Aerospace University*

***Abstract***

In recent years, the use of computer methods in the analysis of diagnostic medical images is becoming more widespread, which leads to the development of mathematical methods focused on the development of tools for scientific research in integrated fields of knowledge. The aim of this work is to develop and study the algorithms for evaluating diagnostic parameters on biomedical images using artificial neural networks. The paper considers a class of biomedical images characterized by the presence of tree-like structures. Such images include the images of fundus of the eye and blood vessels of the human circulatory system, as well as other biological structures.

*Keywords:* neural network, biomedical image, computer method, mathematical method, tree-like structure, eye, blood vessel, circulatory system, biological structure.

*Citation:* Ilyasova NY, Lipka DY, Kupriyanov AV. Use of artificial neural networks for estimating diagnostic parameters in biomedical images. Computer Optics 2003; 25: 151-153.

Access full text (in Russian)

***References***

[1] Rabiner LR, Gold B. Theory and application of digital signal processing. Englewood Cliffs, NJ: Prentice Hall; 1975.
[2] Dorogov AY. Structural models and topological design of fast neural networks. Proc Int Conf on Information Tools and Technologies 1977; 1: 264-269.
[3] Gorban AN. Training neural networks. Moscow: "ParaGraph" Publisher; 1990.
[4] Eremin DI. Contrast enhancement and neuro programs. Krasnoyarsk: KSTU Publisher; 1994.
[5] Gorban AN, Rossiev DA. Neural networks for personal computer. Novosibirsk: "Nauka" Publisher; 1996.