The Application of Neural Networks in the Pedagogical Process of Training Prospective Computer Science Educators

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Abstract:

This article discusses the possibilities of applying neural networks in the training of future teachers of informatics. The methods of teaching artificial intelligence and machine learning methods by introducing neural networks in the educational process are discussed at the Department of Informatics of L. N. Gumilev Eurasian National University. The paper discusses the comparison of face recognition algorithms in the field of neural network construction, learning and computer vision, in particular, Haar cascade classifier and MTCNN algorithm. Methods for dealing with hidden layers, data classification, and improving the efficiency of neural networks are also discussed. These methods will enable future computer science teachers to enhance STEM learning and learn the fundamentals of machine learning.

Keywords:

neural networks, machine learning, computer vision, face recognition, Haar cascade classifier, MTCNN algorithm, STEM education, computer science teacher training, artificial intelligence, deep learning.