The Application of a Hybrid Neural Network for Recognition of a Handwritten Kazakh Text

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Abstract : The recognition of a handwritten Kazakh text is a relevant objective today for the digitization of materials. The study presents a model of a hybrid neural network for handwriting recognition, which includes a convolutional neural network and a multi-layer perceptron. Each network includes 1024 input neurons and 42 output neurons. The model is implemented in the program, written in the Python programming language using the EMNIST database, NumPy, Keras, and Tensorflow modules. The neural network training of such specific letters of the Kazakh alphabet as ә, ғ, қ, ң, ө, ұ, ү, h, i was conducted. The neural network model and the program created on its basis can be used in electronic document management systems to digitize the Kazakh text.

Keywords : handwriting recognition system, image recognition, Kazakh font, machine learning, neural networks
Conference Title : ICDAR 2020 : International Conference on Document Analysis and Recognition
Conference Location : Jerusalem, Israel
Conference Dates : November 26-27, 2020