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UDC 004.93

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INCREASING THE EFFICIENCY OF RECOGNITION

In the work, a new algorithm for finding coefficients that determine significance extent of the values of geometric characteristics that are used for determination of racial and ethnic identity of human is proposed.

Recently, modern information and communication technologies have developed rapidly. Emerging information society includes a number of important issues that have not been fully resolved and studied. One of these pressing issues is the racial and ethnic identification of a person basing on the images. Currently, specialists in various fields of science are dealing with this issue. The problems existing in this area have been partially solved by very few specialists using different methods.

Upon recognizing a person, a facial image (photo portrait) is of particular theoretical and practical value [1]. There is currently a significant number of articles devoted to recognize people based on portrait photographs]. However, there are much less works on the recognition of people based on their affiliation to an ethnic group is much less [2].

A new method is proposed to create a real three-dimensional portrait photograph based on the two-dimensional portrait for synthesis of two dimensional portrait photographs arbitrarily made in some works using special models prepared in accordance with gender and ethnicity [3].

Visual information such as gender, age, ethnicity and facial expression play an important role in face-to-face communication. Some articles have proposed a new approach for ethnic classification of the human face based on the portrait photograph. Gabor Wavelets Transformation identifying the main facial expressions and eye reticular membrane samples were combined in this approach. Support vector apparatus was used for ethnic classification. Using the system based on this approach, 94% ethnic evaluation was achieved in different lighting conditions [4].

Experts from different scientific fields studies problem solutions in determination of racial and ethnic identity of a person. Existing problems in this field are solved by experts through the use of various methods.

For the solution of the existing problems, researches are being carried out in the fields of anthropology, ethnography, and racism included in social sciences and in the fields of biometric technologies, pattern recognition, medicine, etc included in technical sciences.

In this work, method and identification algorithm that determine generalized geometric characteristics of standard image of face has been developed on the basis of the images of people having the same historical and ethnic roots. Thus, probabilities of identity are calculated through comparison of person’s image with standard image of ethnic group, in order to determine ethnic group identity of any person.

In this article, calculation method of significance extent of geometric characteristics which applied in the work [5] has been used.

The determination of coefficients that show importance extent of geometric characteristics causes reduction in numbers of geometric characteristics that don’t have particular importance and in time that is spent for the identification and improvement of identification quality.

In the paper [6] a new algorithm is proposed to finding the coefficients that determine importance extent of values of geometric charac-

teristics which are used for recognition of a person on the basis of photo portraits.

Clusters are organized by taking the same characteristics of the geometric characteristics those belongs to the every image of ethnic group. In order to determine significance extent of values of geometric characteristics, identification process is implemented by the temporary replacement of each values of geometric characteristic of a person in cluster with the values taken from interval of each standard image and the effect of the change in recognition process is evaluated.

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