RECOGNISING VISUALS BY ARTIFICIAL INTELLIGENCE IN THE FIELD OF INFORMATION SECURITY IN RELIGIOUS EDUCATIONAL ORGANIZATIONS.

Jumayev Turdali Saminjonovich*; Tukhtanazarov Dilmurod Solijonovich**; Inog'omova Mohirabonu Fatxulla qizi***

*PhD,

Department of "Modern Information and Communication Technologies",

International Islamic Academy of UZBEKISTAN

Email id: turdali240483@gmail.com

**PhD,

Department of "Modern Information and Communication Technologies",

International Islamic Academy of UZBEKISTAN

Email id: dtuxtanazarov@gmail.com

***Student,

International Islamic Academy of Uzbekistan Modern Information and Communication,

Department of Technologies Direction of Information Security Management 2st Stage,

UZBEKISTAN

Email id: graduate inagamova3730@gmail.com

ABSTRACT

This article aims to focus on the development of a recognition system, which is one of the most crucial issues of information security. The system was developed using artificial intelligence algorithms. The results of experimental studies on various images are also presented.

KEYWORDS: *Artificial Intelligence, Technique, Technology, Software, Image, Angle, Class, Plastic Card.*

INTRODUCTION

One of the rapidly developing areas of information technologies in the world is personal recognition, which is related to the creation of biometric systems. Biometric systems are widely used in social networks, electronic payments, forensics and a number of other fields. Therefore, at present, great attention is being paid to the improvement, development and implementation of methods and algorithms of personal recognition based on biometric technologies. The creation of biometric technologies and their widespread use is supported by scientific research in the developed countries of the world, including the USA, Germany, the Russian Federation, England, China, Japan, South Korea and other countries. These researches are primarily focused on increasing the speed and reliability of biometric systems. Therefore, one of the most important issues is the development of image preprocessing algorithms that provide high performance of these systems.

MAIN PART

In our country, the development of our national traditions and values, the in-depth study of the scientific heritage of our great thinkers, the education of our youth with love for the Motherland, knowledge and intellectual well-being are given attention as a priority of state policy.

The reforms carried out in this area have gained recognition worldwide and are considered to be a model of religious tolerance. In particular, the exclusion of Uzbekistan from the list of countries of particular concern in the sphere of religious freedom, the adoption of the resolution "Enlightenment and Tolerance" proposed by Uzbekistan at the plenary session of the UN General Assembly are clear examples of the words above. Particularly, the management of systems for access to facilities belonging to the religious sphere, the creation of identity recognition systems based on intelligent systems is one of the topical issues.

Theoretical research into the concept of artificial intelligence began in the 13th century. However, the official birth of the science of artificial intelligence dates back to the 1940s of the 20th century. At that time, Norbert Wiener founded the science of cybernetics.

Artificial Intelligence is a system of software environments in which human thinking is simulated in a computer process. The term "artificial intelligence" was coined by Stanford University (USA) in 1956.

Programmes based on artificial intelligence solve a number of problems to varying degrees. Before creating any artificial intelligence system, it is advisable to organise several stages of designing this system [1, 2, 3]. The stages of AI design are:

- ✓ Problem identification;
- ✓ Data preparation;
- ✓ Selection of algorithms;
- ✓ Learning algorithms;
- ✓ Selection of a specific programming language;
- ✓ Run on the chosen platform.

Once these steps are clearly understood, the implementation process becomes much easier. Today, the demand for artificial intelligence is also growing day by day. It is quite possible to organise the processes in these steps using different algorithms. The use of different algorithms results in different facial images [4, 5, 6, 7].

Figure 1. Face images from different angles.

Today, artificial intelligence is used in various fields. Identification technologies based on human biometrics are also being created. Artificial intelligence is able not only to recognize a person by biometric parameters, but also to recognize objects in different images [8, 9, 10].

Question Posed

Image recognition using artificial intelligence in information security. By creating artificial intelligence, we collect images that have several groups to use image recognition technology. We have chosen images such as pens, pencils, plastic cards.

We divided the selected images into the following classes:

1. Class name (Pen).

2. Class name (Plastic Card).

3. Class name (Person).

After creating the classes, we insert the images belonging to this class. We have received various results from the recognition process and will review these results.
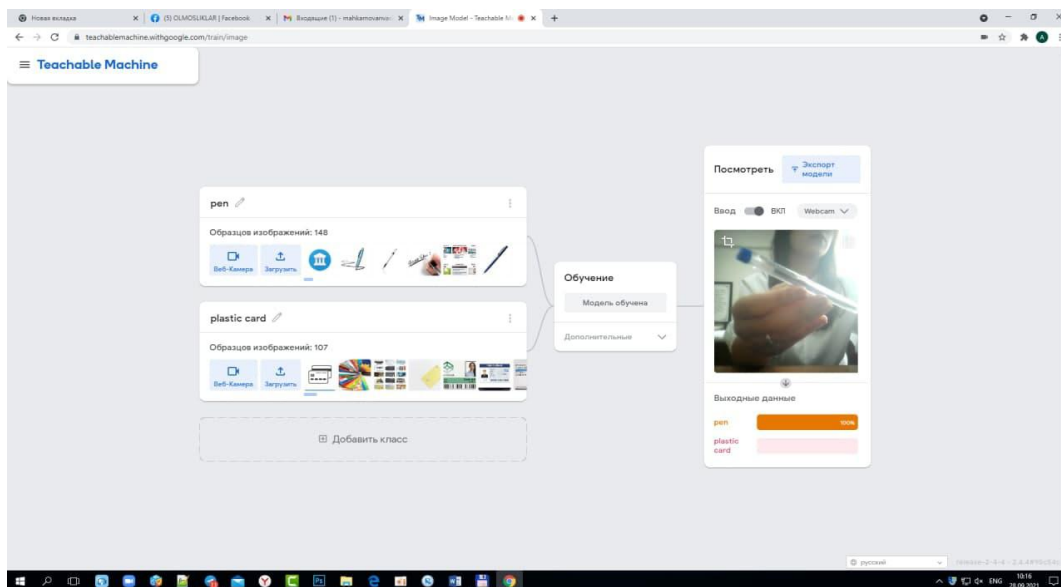

Figure 2. Result obtained by pen class name.

When we show the "Pen", "Plastic Card", "Person" to the ready artificial intelligence technology through the web camera:

✓ The result of the pen class, i.e. the recognition rate, was 100% when we entered 300 different images belonging to this class;
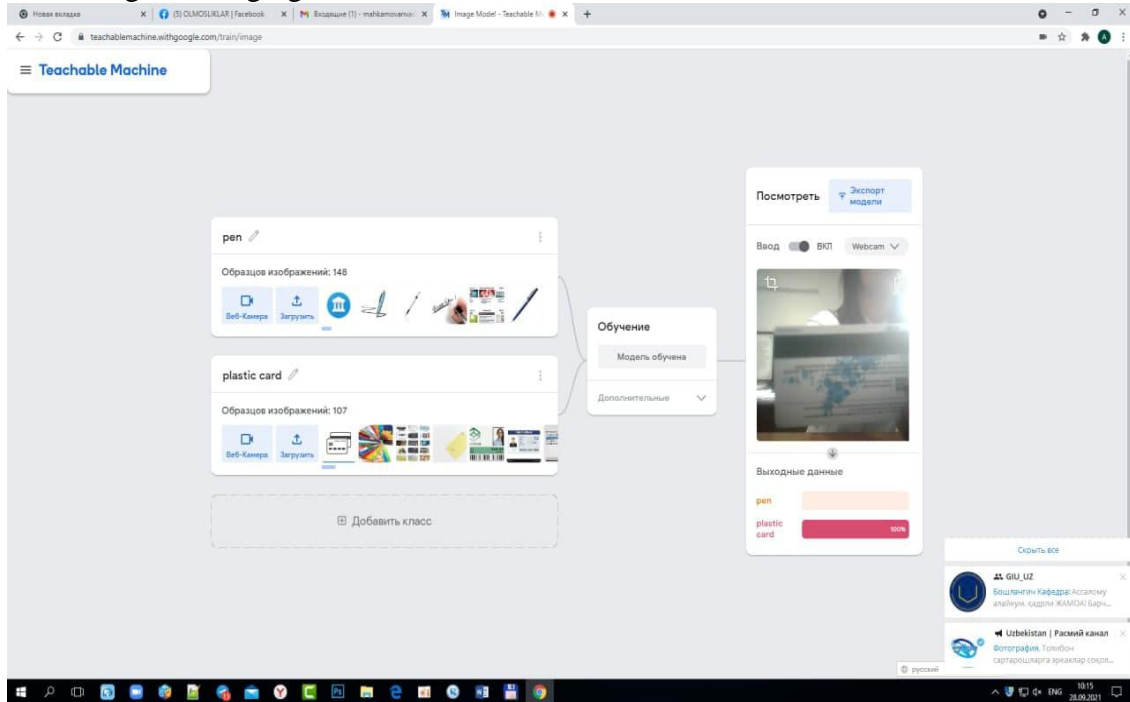

Figure 3. Result obtained by Plastic Card class name.

✓ The result obtained for the Plastic card class, i.e., the recognition index, when we entered 615 different images belonging to this class, was 100%;
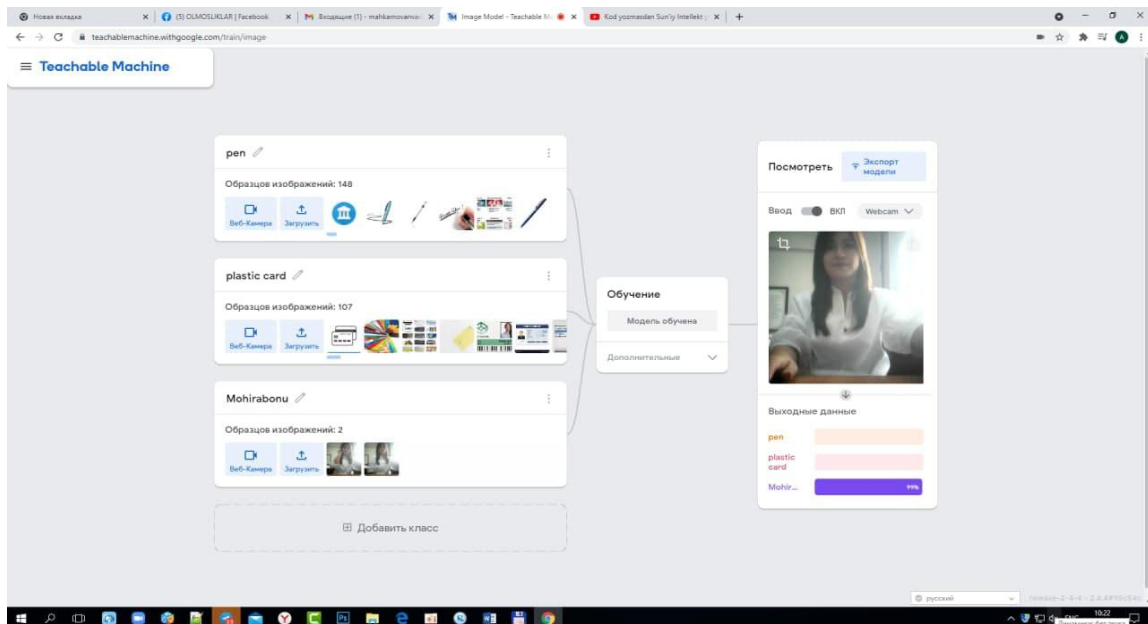

Figure 4. The result obtained by the image of the person's face.

✓ In order to know the level of person recognition in our last created class, we included 9 images of 1 person taken from different rakus, and as a result, the recognition rate showed 100%;
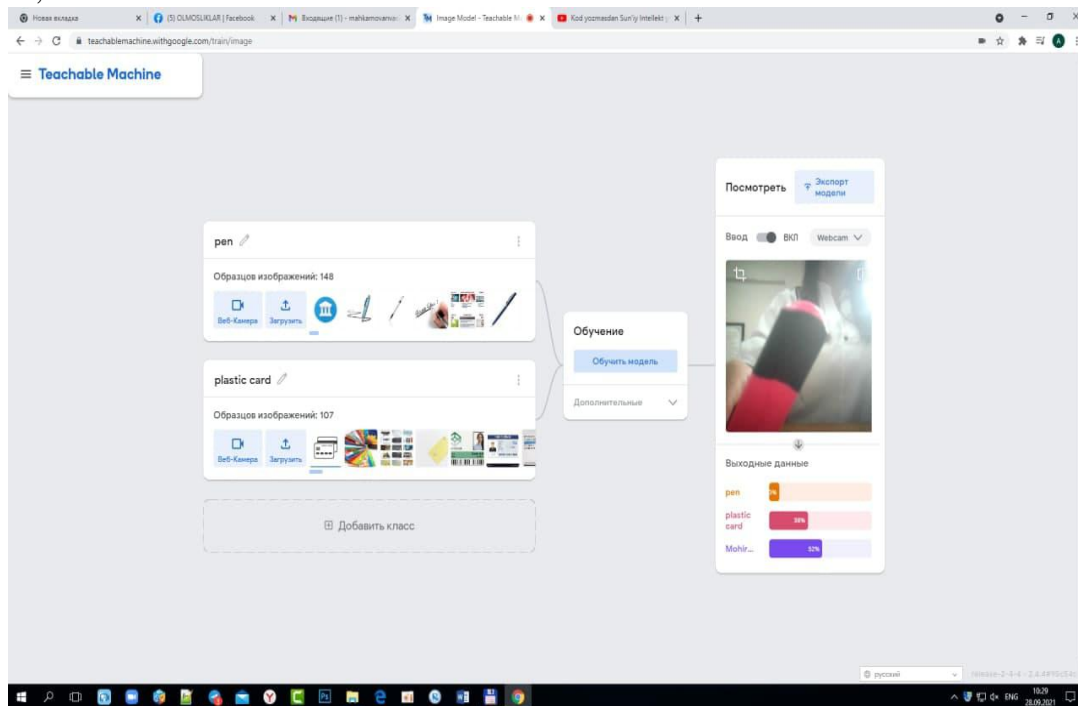

Figure 5. The result obtained from an image that is not included in the database.

✓ In addition, the recognition rate of the artificial intelligence program created in the process of showing the image of various items not included in the database to the technology did not show a clear percentage. The reason for the low recognition rate is that another item we tested was not included in the program.

In order to recognize images in artificial intelligence programs, the image must be of good quality and the lighting must be normal.

CONCLUSION

From the conducted experimental studies, it can be said that the greater the number of images of a given object in classes, the higher the recognition rate will be if the images are taken from different angles. The use of artificial intelligence in the software development process has been found to be effective. It is also necessary to pay attention to the light in the process of taking pictures. Because, if the given image is not of good quality, the recognition accuracy has dropped significantly. Artificial intelligence can be used effectively in person recognition.

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