Intellectual System for Providing Lviv Tourist Information About UNESCO Buildings

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The growing interest in image recognition tasks is driven by the need for automation, both of the functions of controlling and managing complex dynamic objects in real time, and of imaginative communication processes in intelligent systems. Therefore, the search and implementation of effective principles for the transfer of human recognition function to computerized systems is still ongoing. One of the promising ways of solving this problem is based on the use of artificial neural networks and neurocomputers, as the most appropriate to the class of pattern recognition tasks. Nowadays, a large number of neural network paradigms are proposed for solving pattern recognition problems. Significant difficulties in recognition are images that have been subjected to any distortion (noise, displacement, rotation, scaling). This problem is solved by choosing the appropriate architecture and learning method. Analysis of the works shows that there is still no model that is not sensitive to all kinds of distortions. The problem is well enough solved with respect to the offset and noisy images of the reverse error propagation neural networks. However, these types of distortions such as resizing and rotating are still difficult. They see the prospect of overcoming these difficulties in a new neural network paradigm, a perceptron model that employs qualitatively new architecture and unsupervised learning. Perceptron architecture is based on the organization of the human visual system.

The purpose of the study is to create an intelligent system for providing information to tourists about Lviv architectural monuments using TensorFlow technology and violin programming languages. The result of the work should be an information site with the ability to identify buildings.

The objective of the research is to create an intelligent system for providing information to tourists in Lviv, in which the following functions would be implemented:

- issuing the necessary information for the Lviv tourist;
- user-friendly interface;
- recognition of known buildings;
- provide the site with easy operation and simple design;
- provide the site with a map of UNESCO-listed buildings;
- provide user information on the historical value of buildings.

Research methods: methods of analysis, methods of web-programming, analogies, comparisons, methods used in economics.

COLINS'2020, Volume II: Workshop. Lviv, Ukraine, April 23-24, 2020, ISSN 2523-4013
http://colins.in.ua, online

Pattern recognition is an urgent task in the modern world, as it is used underwater, above water, in the air. Pattern recognition is present in various spheres of life: the army, the gaming industry and, in particular, security.

For a long time the task of recognizing graphic images was considered by man from the biological and psychological aspects. In this study were subjected to only qualitative characteristics that did not allow to accurately describe the mechanism of operation. Obtaining functional dependencies was usually associated with the study of receptors of the organs of hearing, touch or vision. However, the principles of decision-making remained a mystery. It is believed that the main mistake at the dawn of the study was the idea that the brain functions according to certain algorithms, and therefore, having found out this system of rules, it can be reproduced with the help of computing and technical means.

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