

Description for the general public

Currently, in the digitized to a high extent world, various types of electronic screens are more and more often used for marketing presentations of products, services or socially important messages. Products' graphical demonstrations in internet shops or digital advertisements play extremely important roles in shaping potential buyers' perception and, consequently, influence purchase decisions. Effective product presentation has been of interest to many researchers and practitioners for a long time.

Nowadays, there is an increasing number of products or their packagings that exist only virtually, for instance, software, music or various kinds of services. In light of this, knowledge about digital marketing presentation and its perception seems to be even more significant than ever before. Research results, on how people respond to specific factors related with graphical stimuli, provide invaluable information both for graphical designers and scientists developing or extending formal theories of human behavior.

The way in which a person moves the attention between different objects can be examined by observing the movements of his eyeballs. In this project research, we will use the device called eye tracker that allows to monitor, register and then analyze such human eyeballs activity. The visual activity recorded by this system is associated with so-called overt attention. In addition to this fairly obvious relationship between the area observed by the person and his overt attention, people also use covert attention that is much more difficult to investigate.

One way of classifying products is to determine how much the buyers get involved in selecting articles with specific characteristics. Products that require a lot of attention include smartphones, computers, cars, etc. On the other hand, by purchasing shampoo, yogurt or soap, we do not get involved so much. In the proposed project, the visual behavior of people who decide on the purchase of products requiring little or large involvement will be examined.

In addition, using advanced mathematical modeling, we will try to detect and describe how buyers use covert attention. The mathematical tools used will vary in the way the visual data is encoded and processed. In one case, the data on the frequency of observation of given areas will be directly applied, while in the second case, we will use approximate concepts based on the theory of fuzzy sets. In addition, we will show what the differences in the use of these two approaches are. We will also identify their advantages and disadvantages.