INTELLECTUAL SYSTEM FOR RECOGNITION AND ANALYSIS OF FOOD PRODUCTS

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Considering the long-term COVID-19 consequences, doctors have suggested following a certain diet, as quality products are important for a healthy lifestyle, as well as the fight against various chronic diseases. Advances in technology encourage manufacturers to increase profits and reduce production costs by using flavorings and specific food E-additives, as well as their synthetic combinations, each of which has several characteristics [1]. Some additives harm the human body, and several of them have not been fully studied, which potentially creates the risk of genetic mutations and, accordingly, autoimmune and carcinogenic effects in the future [2]. The *aim* of this work is to analyze the developed system for the recognition and analysis of food products.

Text and image recognition is one of the challenging areas of computer vision and machine learning, both theoretically and practically [3]. The paper describes an intelligent system that applies a trained neural network model to a database filled with food products, a barcode scanner with an additional correction procedure if the code is severely damaged, a regular expression engine, a text similarity metric, and a product rating system. The program allows us to get detailed information about the product itself, its composition, a list of E-additives (a database of synonyms in three languages, further expansion is planned), scientific information on them, basic information, a rating of "usefulness" of the product, which is calculated according to a special formula taking into account feedback users, harmfulness / usefulness of components, features of similar products, etc. An average rating of our application based on more than 10 thousand downloads and 536 reviews using a 5-point rating scale by users is 4,3 points [4].

So, the presented system can be successfully used as human support due to its simplicity, flexibility and efficiency.

References

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