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DETECTION OF HARMFUL SUBSTANCES IN UNDERARM PRODUCT USING OPTICAL CHARACTER RECOGNITION AND SUPPORT VECTOR MACHINE

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ABSTRACT

Products for the underarm area which includes deodorant and antiperspirant are vital for maintaining personal hygiene, however some people are worried about how the product itself can affect their health and general wellbeing due to unfamiliar ingredients name on the label. Existing applications that are available for consumer to check safeties of a product frequently require users to create an account, include advertisements or provide unhelpful result. Thus, people manually search up each ingredient of the product using any search engine which is time-consuming. Hence, this study aims to develop a user-friendly system that can quickly and accurately identify harsh chemical substances in underarm products. The system uses Optical Character Recognition (OCR) and Support Vector Machine (SVM) to extract ingredients name and classify the product respectively. This study reveals how well the system classifies underarm product and enable users to make a great choice about the safety of the product. This is due to the accuracy obtained from classifying 120 testing data using Support Vector Machine classifier and achieved 93.4%. In conclusion, the suggested technique offers a potential way to get over the constraints of existing applications, then giving the consumer a quick and reliable way to choose a safe underarm product for everyday use. As for future work, the system database might be expanded with list of chemical compounds in order to detect more harmful substances in the future. Next, various methods of machine learning and OCR tools could be evaluated for improved performance and classification accuracy and text detection respectively in the future research for further improvement.

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