

An application for automatic crispiness classification of chips using machine learning

Degree programme : BSc in Computer Science | Specialisation : Data Engineering

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This project aims to automate the quality classification of puffed snacks, such as potato chips. The final result allows the production operators to extract the mechanical and acoustic characteristics of the products through the use of a texture analyzer and a microphone, the preprocessing of the extracted features, and the automated classification through a user interface application.

First, we developed the functionality to preprocess raw data from the texture analyzer and microphone. The preprocessing functionality extracts the features needed to perform automated classification. Second, we implemented two machine learning models (Artificial Neural Network and Support Vector Machine) that allow us to make the automated evaluation of the crispiness level of puffed snacks. Both machine learning models perform classification with an average accuracy score of 89%. Third, we developed a web application that implements the preprocessing and automated classification functionalities. Finally, we completed the deployment of the application. You can now reach and use the application following the link www.crispy-app.software until 07/31/2022.



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