FRANCISCA DE ACULODI

Sariaren IX Edizioa

Genero ikuspegia UPV/EHUko Gradu amaierako lanetan barne hartzearen FRANCISCA DE ACULODI Sariaren IX. Edizioaren —2021/2022 ikasturtea— Ingeniaritza eta Arkitektura jakintza adarraren epaimahaia bildu da, eta deialdi honetan honako Gradu hauetako aurkezturiko 2 lanak aztertu ondoren, epaimahaiak saria honako lan honi ematea erabaki du:

Euskaraz:

HUTSIK

Gaztelania edo beste hizkuntzaz:

ANALYSIS OF THE INFLUENCE OF SEX IN DIAGNOSTIC CLASSIFICATION OF PARKINSON'S DISEASE BASED ON NON-MOTOR MANIFESTATIONS BY MEANS OF MACHINE LEARNING METHODS

Deialdiaren 3. puntua betetzeko

"Epaimahaiek 2023ko otsailaren 17a baino lehen argitaratuko du deialdiaren emaitza https://www.ehu.eus/eu/web/berdintasuna-direccionparalaigualdad/-/francisca-de-aculodi-ix-edizioa orrian, honako hauen berri emanez: irabazlearen izena, tutorearen izena eta Saila, zein Gradu eta ikastegikoa den, eta saritutako lanaren edo lanen laburpena".

Gaztelania edo beste hizkuntzaz eginiko lanaren irabazlea:

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LABURPENA:

Parkinson s disease (PD) is the second most common neurodegenerative disorder, after Alzheimer's disease. In the early stages of the disease, when motor symptoms have not yet manifested themselves, the accuracy of making a correct diagnosis is currently very limited. This work aims to analyze the influence of sex in diagnostic classification of Parkinson's disease based on non-motor symptoms by using machine learning methods. These symptoms have been evaluated in 490 subjects with PD and 197 healthy control subjects. The machine learning methods that have been used are Support Vector Machine (SVM), Multilayer Perceptron (MLP) and Extreme Gradient Boost (XGB). The impact has been evaluated using different metrics and the main analysis has been carried out using PPMI database. One of the main tasks of this project is to analyze the importance of the features.

This has been done using SHAP and XGBoost tools. The results show that both tools agree on the most important selected variables. However, sex does not seem to be a determining factor in classifying between PD and Healthy Control (HC). Referring to the classification of sex, it seems that sex cannot be reliably classified according to the data obtained and the tests carried out. This conclusion has much to do with the fact that sex does not appear to be an important attribute in classifying PD/HC. As a general conclusion, with these data and the methods used, for early Parkinson's patients the non-motor symptoms do not change according to sex.