University of Sulaimani Researchers Update Knowledge of Obesity (Hybrid Machine Learning Model for Body Fat Percentage Prediction Based on Support Vector Regression and Emotional Artificial Neural Networks).

Date: Dec. 4, 2021
From: Obesity, Fitness & Wellness Week
Publisher: NewsRX LLC
Document Type: Report
Length: 441 words

Full Text:
2021 DEC 4 (NewsRx) -- By a News Reporter-Staff News Editor at Obesity, Fitness & Wellness Week -- Investigators publish new report on obesity. According to news reporting from the University of Sulaimani by NewsRx journalists, research stated, "Obesity or excessive body fat causes multiple health problems and diseases. However, obesity treatment and control need an accurate determination of body fat percentage (BFP)."

The news reporters obtained a quote from the research from University of Sulaimani: "The existing methods for BFP estimation require several procedures, which reduces their cost-effectivity and generalization. Therefore, developing cost-effective models for BFP estimation is vital for obesity treatment. Machine learning models, particularly hybrid models, have a strong ability to analyze challenging data and perform predictions by combining different characteristics of the models. This study proposed a hybrid machine learning model based on support vector regression and emotional artificial neural networks (SVR-EANNs) for accurate recent BFP prediction using a primary BFP dataset. SVR was applied as a consistent attribute selection model on seven properties and measurements, using the left-out sensitivity analysis, and the regression ability of the EANN was considered in the prediction phase. The proposed model was compared to seven benchmark machine learning models."

According to the news editors, the research concluded: "The obtained results show that the proposed hybrid model (SVR-EANN) outperformed other machine learning models by achieving superior results in the three considered evaluation metrics. Furthermore, the proposed model suggested that abdominal circumference is a significant factor in BFP prediction, while age has a minor effect."

For more information on this research see: Hybrid Machine Learning Model for Body Fat Percentage Prediction Based on Support Vector Regression and Emotional Artificial Neural Networks. Applied Sciences, 2021,11(9797):9797. (Applied Sciences - http://www.mdpi.com/journal/applsci). The publisher for Applied Sciences is MDPI AG.

A free version of this journal article is available at https://doi-org.ezproxy.herts.ac.uk/10.3390/app11219797.

Our news journalists report that more information may be obtained by contacting Solaf A. Hussain, Computer Science Department, College of Science, University of Sulaimani, Sulaimani 334, Iraq. Additional authors for this research include Nadire Cavus, Boran Sekeroglu.

Keywords for this news article include: University of Sulaimani, Cyborgs, Obesity, Bariatrics, Overnutrition, Machine Learning, Diet and Nutrition, Health and Medicine, Nutrition Disorders, Emerging Technologies, Support Vector Regression, Artificial Neural Networks, Nutritional and Metabolic Diseases and Conditions.

The citation for this news report is: NewsRx. University of Sulaimani Researchers Update Knowledge of Obesity (Hybrid Machine Learning Model for Body Fat Percentage Prediction Based on Support Vector Regression and Emotional Artificial Neural Networks). Obesity, Fitness & Wellness Week. December 4, 2021; p 4866.