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SCUT Sampling and Classification Algorithms to Identify Levels of Child Malnutrition (Conference Paper)

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Abstract

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Child malnutrition results in millions of deaths every year. This condition is a potential problem in Peruvian society, especially in the rural parts of the country. The consequences of malnutrition range from physical limitations to declining mental performance and productivity for the individual. Government initiatives contribute to decreasing the causes of this disorder; however, these efforts are focused on long term solutions. The need for a fast and reliable way to detect these cases early on still exists. This paper compares classification techniques to determine which one is the most appropriate to classify cases of malnutrition. Neural networks and decision trees are used in combination with different sampling techniques, such as SCUT, SMOTE, random oversampling, random undersampling, and Tomek links. The models produced using oversampling techniques achieved high accuracies. Further, the models produced by the SCUT algorithm achieved high accuracies, preserved the behavior of the data and allowed for better representations of minority classes. The multilayer perceptron model that used the SCUT sampling techniques was chosen as the best model. © Springer Nature Switzerland AG 2020.

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[Child malnutrition](#) [Decision trees](#) [Neural networks](#) [Random forest](#) [Sampling techniques](#)

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[Classification algorithm](#) [Classification technique](#) [Government initiatives](#)[Long-term solutions](#) [Oversampling technique](#) [Physical limitations](#)[Random under samplings](#) [Sampling technique](#)

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
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