CONL708: Assignment 2: Unary and Imbalanced Classification comparison

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Unary classification, also known as One-class Classification, is a Machine Learning algorithm, attempting to identify items of a specific group amongst full sets of observations; training mostly on objects of that group [1, p. 79]. Unary Classification tends to focus on problems regarding detection for anomalies or fraud [1, p. 79].

Imbalanced Classification construes as classification scenarios where records associated within a dataset are unequal, therefore providing a biased distribution towards one class over another. Imbalanced classification portrays often within binary classification tasks, where one or more class is more pronounced more than another, such as detection or diagnosis scenarios [2].

One example where the two states above share similar qualities, is when focusing on detection. Firstly, both instances arise where the dataset in question skews towards one class over another. Secondly, both cases can be concurrent with one another where imbalanced data is involved for a One-class classification task.

However, while these two have similarities, there are differences also. Unary classification is a specific classification task, with the aim to only focus on one task – for instance with detection activities; whereas Imbalanced classification is a state that can apply to multiple types of classification – such as Binary, Multiclass or Naïve Bayes classification - where the data is concerned.

# References

[1] Andriy Burkov, The hundred-page machine learning book. Quebec, Canada] Andriy Burkov, 2019, p. 79.

[2] J. Brownlee, “A Gentle Introduction to Imbalanced Classification,” Machine Learning Mastery, Dec. 22, 2019. https://machinelearningmastery.com/what-is-imbalanced-classification/ (accessed Sep. 13, 2022).