

ABSTRACT

Provided are systems that include a processor to receive a training dataset including a plurality of data records, calculate feature projection errors and classification scores for the plurality of data records using a machine learning model, determine a distribution of features according to feature projection error, apply a downscaling function to each feature value of a feature in a false positive classification distribution to provide a downscaled set of feature values, apply an upscaling function to each feature value of a feature in a false negative classification distribution to provide an upscaled set of feature values, combine the downscaled set of feature values and the upscaled set of feature values with the training dataset to provide an updated training dataset, and train the machine learning model using the updated training dataset to provide an updated trained machine learning model. Methods and computer program products are provided.

<Figure 3>