



The figure shows the fitted learning curves in 1000 repeated experiments. In the figure, the horizontal axis represents the training set size, and the vertical axis represents the test error, test precision, test recall, and test F1 score respectively. The scatter points marked with white circles present the actual performance of the test set. The blue solid line shows the fitting of the POW3 learning curve, the red solid line represents the fitting of our proposed learning curve, and the black dashed line indicates the critical value of the evaluation metrics. It can be clearly seen from the figure that our proposed learning curve has a smaller fluctuation and better stability, and it always remains within the range of the critical values of the metrics (i.e., the interval  $[0, 1]$ ).