In this class, we discussed visualising and evaluating the model’s performance.

First is the profit matrix; when changing the cost, the model may be chosen differently. Each adjacency block is an alternative (like whether we choose to send mail while the real has donated blood), and so we should pay attention to avoid double counting. Another is the confusion matrix. When applying the model and setting a threshold, the prediction can give us a 2\*2 box representing the number separating Positive/Negative right or wrong. Each model generates only one ROC model, and using the prediction to plot the ROC curve and count AUC is one of the main judgement criteria. For the horizontal line, the left point is better than the right; for the vertical line, the upper is better, but we can’t determine corners. For ROC, it’s good to compare models, but it is not straightforward, unable to deal with unbalanced data, and can’t show the impact of different costs. So, when choosing models, we not only focus on numerical data but also cares about the company’s lifelong process, how to balance the cost and profit and the inner logic of decision-making.

As the professor mentioned, all models are wrong, but some are useful. But actually,

the company rarely cares about classification results, instead, it cares about the decision-making process and results.