AUC (Area Under Curve) – ROC (Receiver Operating Characteristics) curve is a performance measurement for classification problems at various thresholds settings. The ROC is a probability curve and the AUC represents the degree of distinction between classes. In our study, the ROC shows how much an ANN model is capable of distinguishing between classes. While an AUC close to 1 indicates that a model can accurately distinguish between two classes (Figure 1, Panel A, below), an AUC of 0.5 indicates that the model cannot distinguish between them (Figure 1, Panel B, random guess). Figure 1 shows examples of ROC curve with interpretations.
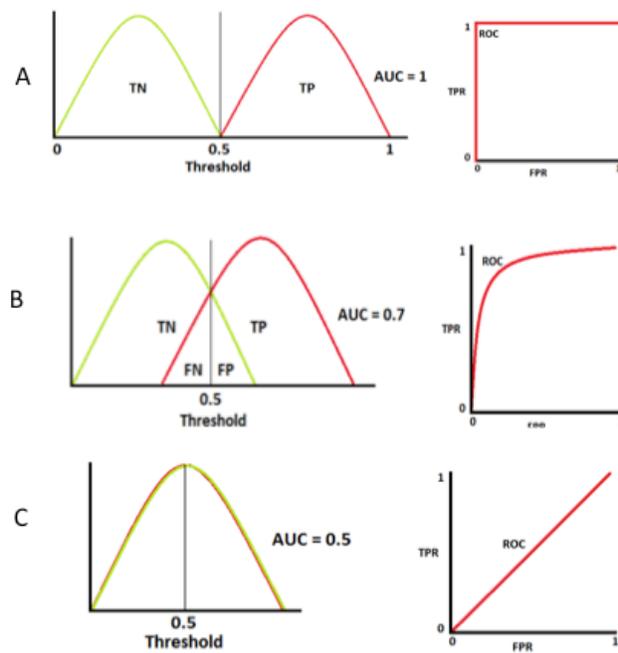

Figure 1. Distinguishing two classes as a function of the ROC – AUC. A, indicates excellent distinction between two classes with an AUC of 1; B, indicates a moderately good distinction between two classes with an AUC of 0.7; C, indicates a random guess with an AUC of 0.5.