Terms

Terms and abbreviations used in the description of Binary classification assessment visualizer are listed here.

- **Condition positive (P)**: the real number of positive cases.
- **Condition negative (N)**: the real number of negative cases.
- **True positive (TP)**: the number of correctly classified positive cases.
- **True negative (TN)**: the number of correctly classified negative cases.
- **False positive (FP)**: the number of incorrectly classified positive cases. It is **type I** error.
- **False negative (FN)**: the number of incorrectly classified negative cases. It is type II error.
- **True positive rate (TPR)**: rate of correctly classified positive cases based on the total number of positive cases. *TPR* is called *sensitivity* of classification.
  $\mathrm{TPR} = \frac{\mathrm{TP}}{\mathrm{P}} = \frac{\mathrm{TP}}{\mathrm{TP} + \mathrm{FN}} = 1 - \mathrm{FNR}.$
- **True negative rate (TNR)**: rate of correctly classified negative cases based on the total number of negative cases. *TNR* is called *Specificity* of classification.
  $\mathrm{TNR} = \frac{\mathrm{TN}}{\mathrm{N}} = \frac{\mathrm{TN}}{\mathrm{TN} + \mathrm{FP}} = 1 - \mathrm{FPR}.$
- **Positive predictive value (PPV)**: rate of correctly classified positive cases based on the total number of the cases classified as the positive ones. *PPV* is called *Positive predictive value* of classification.
  $\mathrm{PPV} = \frac{\mathrm{TP}}{\mathrm{TP} + \mathrm{FP}}.$
- **Negative predictive value (NPV)**: rate of correctly classified negative cases based on the total number of the cases classified as the negative ones. *PPV* is called *Negative prediction value* of classification.
  $\mathrm{NPV} = \frac{\mathrm{TN}}{\mathrm{TN} + \mathrm{FN}}.$
- **False negative rate (FNR)**: rate of incorrectly classified negative cases based on the total number of positive cases. For *FNR 1 - Sensitivity*. term is frequently used
  $\mathrm{FNR} = \frac{\mathrm{FN}}{\mathrm{P}} = \frac{\mathrm{FN}}{\mathrm{FN} + \mathrm{TP}} = 1 - \mathrm{TPR}.$
- **False positive rate (FPR)**: rate of incorrectly classified positive cases based on the total number of negative cases. For *FPR 1 - Specificity*. term is frequently used
  $\mathrm{FPR} = \frac{\mathrm{FP}}{\mathrm{N}} = \frac{\mathrm{FP}}{\mathrm{FP} + \mathrm{TN}} = 1 - \mathrm{TNR}.$
- **Overall classification rate (OCR)**: rate of correctly classified cases based on the total number of cases. *OCR* is called *Overall classification rate*.
  $\mathrm{OCR} = \frac{\mathrm{TP} + \mathrm{TN}}{\mathrm{P} + \mathrm{N}} = \frac{\mathrm{TP} + \mathrm{TN}}{\mathrm{TP} + \mathrm{TN} + \mathrm{FP} + \mathrm{FN}}.$
- **F_1 score** means the **average harmonic** value of *Accuracy* and *Sensitivity*. The metric is also called **F measure**.
  $\mathrm{F}_1 = 2 \cdot \frac{\mathrm{PPV} \cdot \mathrm{TPR}}{\mathrm{PPV} + \mathrm{TPR}} = \frac{2\mathrm{TP}}{2\mathrm{TP} + \mathrm{FP} + \mathrm{FN}}.$

- **Matthews correlation coefficient (MCC)** — Matthews correlation coefficient.
  $\mathrm{MCC} = \frac{\mathrm{TP} \cdot \mathrm{TN} - \mathrm{FP} \cdot \mathrm{FN}}{\sqrt{(\mathrm{TP} + \mathrm{FP})(\mathrm{TP} + \mathrm{FN})(\mathrm{TN} + \mathrm{FP})(\mathrm{TN} + \mathrm{FN})}}$.
- **Overall precision rate (OPR)** means the arithmetical mean of *Positive predictive value* and *Negative predictive value*. *OPR* means the *Overall Precision Rate*.
  $\mathrm{OPR} = \frac{\mathrm{PPV} + \mathrm{NPV}}{2}$.