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APPENDIX

Measure	Description
$F_{i,1,1}$	true positives, point samples in class i are assigned to the class i.
$F_{i,1,2}$	false positives, point samples in class i are assigned to other classes.
$F_{i,2,1}$	false negatives, point samples in other classes are assigned to the class i.
$F_{i,2,2}$	true negatives, point samples in other classes are assigned to other classes.

Table 3. Four common measures.

From the four measures in Table 3 three evaluation measures can be derived.
Precision: a measure of exactness or quality.

$$P_i = \frac{F_{i,1,1}}{F_{i,1,1} + F_{i,2,1}} \qquad (1)$$

Recall: a measure of completeness or quantity.

$$R_i = \frac{F_{i,1,1}}{F_{i,1,1} + F_{i,1,2}} \qquad (2)$$

F1-score: combines precision and recall with equal weights.

$$F1_i = \frac{2P_iR_i}{P_i + R_i} \qquad (3)$$