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Multi-Class Metrics Made Simple: the Kappa Score (aka Cohen's Kappa Coefficient)

Measure The Agreement Between Predicted and True Values



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To calculate ChanceAgree , we first look at the probability of rating a student as **Accept** for each professor. Let's take a look at the rating matrix again; for convenience, we added totals for the rows and columns:



For Professor A, $4 + 1 + 1 = 6$ of the 25 ratings were **Accept**; for Professor B, the number is $4 + 6 + 3 = 13$. The probabilities for rating a student as **Accept** for Professor A and B are thus:

$$\text{ProbA}(\text{Accept}) = 6/25 = 0.24$$

$$\text{ProbB}(\text{Accept}) = 13/25 = 0.52$$

The probability that both professors agree on an **Accept** *by chance* is equal to the product of ProbA and ProbB:

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