

$$IR \text{ ("instance rating")} = oppRat + 2 * (outcome - 0.5) * spread$$

$$PIR \text{ ("padded instance rating")} = \frac{IR * minMatches + oppRat * shrink}{minMatches + shrink}$$

$$rating = \frac{\sum_{matches} PIR * weight}{\sum_{matches} weight}$$

$$minMatches = \min (playerWeightedMatchesPlayed, opponentWeightedMatchesPlayed)$$

$$weight = timeWeight * sequenceWeight * opponentWeight$$

$$weight = \begin{cases} 0 & \text{if } IR > rating \text{ and } outcome = 0 \\ 0 & \text{if } IR < rating \text{ and } outcome = 1 \\ f(time, sequence, opponent) & \text{otherwise} \end{cases}$$