Luck vs Skill in College Basketball

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November 2024

1 Introduction

The Elo score after a team's $n + 1^{\text{th}}$ game is given by

$$\gamma_{n+1} = \gamma_n + \alpha \frac{\gamma_n^{opp}}{\gamma_n} \frac{S_{\text{winner}}}{S_{\text{loser}}}$$

$$\gamma_{n+1} = \gamma_n - \alpha \frac{\gamma_n}{\gamma_n^{opp}} \frac{S_{\text{winner}}}{S_{\text{loser}}}$$

where γ_n is the team's current Elo score (after week n), γ_n^{opp} is the opposing team's current Elo score, $\alpha > 0$ is a weight parameter, and S_{winner}, S_{loser} are the scores of the winner/loser.

2 Other Options

δ_n:

- Could also be this team's score minus the other team's score. This way it's positive for wins causing more of an upward change, and negative for losses causing more of a downward change.

γ_n^{opp}/γ_n:

- Could also do $|\gamma_n^{opp} - \gamma_n|$