

MHI (Meta-Health Index)

Purpose

The purpose of this metric is to measure how healthy the meta was for a given tournament by using a high amount of figure/point overlap between player's armies as a proxy for an un-healthy meta.

Constants

ctw = 0.75 Current Tournament Weight - How much to value the current tournament's results compared to a player's lifetime results

tew = 2 Tail End Weight - How much to value tail-end results, i.e. 4-0 or 0-4, compared to average results, i.e. 2-2

mw = 0.1 Minimum Weight - Minimum weight contribution that can be assigned to a player, regardless of their record

Raw Data Variables

M_t = Max Points of Tournament

Pwp_t = Individual Player's Tournament Win Percent

Pwp_c = Individual Player's Lifetime Win Percent

Calculation

$$W_p = (ctw * Pwp_t) + ((1 - ctw) * Pwp_c)$$

W_p measures the strength of a given player, and is a weighted average of their win percentage in this tournament and lifetime.

$$R_a = \text{Max}(mw, 1 - tew * \frac{0.5 - W_p}{0.5})$$

R_a measures the weight upon which we will value the result of a given player.

$$J_{i,j} = \frac{M_s}{M_t} * R_a$$

$J_{i,j}$ measures the contribution of the points overlap between two given players, weighted by player i 's results.

$$MHI = 1 - \frac{\sum_{i=1}^n \sum_{j=1}^n J_{i,j}}{\sum_{i=1}^n \sum_{j=1}^n R_a}$$

MHI represents how much figure overlap occurred in the meta, and hence the health of the meta. $MHI \in [0, 1]$.