Pokerstars

Value Players

Team, definition

- Team t :

  - A team is a set of players that play continuously together on a given period (life)
    - {john, patrick, larry, patricia}

  - The team has racked $rake_t$ amount of money during his life

Data

- Dataset with two columns : $teams_t$; $rake_t$

  - {john,patrick,larry,patricia} ; 410
  - {john,jerome,larry,patricia} ; 21
  - {ivey,durrrr} ; 55
  - {john,patrick,larry,ivey} ; 88
  - {john,ivey,larry,patricia} ; 14
  - {ivey,durrrr} ; 110

Who's the best player for the room?

- Intuition :
  - The player involved in the juicest tables!

- How to identify him?
  - **Compute Shapley's values!**

Who's the best player for the room?

- **Shapley's value** for player i :
  - Represent how much player i should be retributed for all the rake generated

$$\varphi_i(v) = \frac{1}{\text{number of players}} \sum_{\text{coalitions excluding } i} \frac{\text{marginal contribution of } i \text{ to coalition}}{\text{number of coalitions excluding } i \text{ of this size}}$$