Improving Hockey Team Case Study

Due June 18th, 2019

1. Identify the explanatory variables that affect players' cap hit, then use them to develop a model to predict the cap hit for the players. Explain how your model could assist you to find the most overvalued and undervalued players in the league.
2. Develop an approach to evaluate each line skills (e.g., shooting, skating, etc.), considering the players in the line? Which skills have the most variation and which ones are very similar for all players?
3. Develop an approach to arrange a forward line (comprised of 3 players) with maximum sum of skills by assuming that each line value is average of players' skill (use synergy data sheet).
4. Expand your previous analysis to the case where line's face offs' skill is the maximum of players' skill (instead of average) and skating skill is amplified with the effect of one player being worse than the others.
5. Develop an optimization model to arrange three forward line (each of which is comprised of 3 players) with maximum sum of skills while satisfying the following constraints:
   a. All shooting skills should not be greater than the line's passing skill.
   b. Skating skill is amplified with the effect of one player being worse than the others.
   c. Aggressiveness, body checking, strength, and durability skills are amplified with the effect of one player being best than the others.
   d. Fighting and face off skill is the maximum of the players in the line.
   e. All other skills are simply the average of players' skill in the line.