Champions(153) 额外数据：

1. Appearance rate
2. Win rate overall
3. Win rate according to positions (top\_winrate, jng\_winrate, etc. )

Layer 1: 红蓝方 winrate matrix 替换champion, imputation(ignore data with too less samples)

Layer 2: match up, imputation(0.5 or Nan)(documentation)

Functools - decorator - lrucash，recentlyused

8.11 Next stage

- remove all high cor variable, re-run bayes

- get logistic regression result in r

- find how to acquire accuracy in r

8.15 next stage

- base on 10 variables, adjust optimization variables - second round

- change corr in varlist, do correlation matrix of all variables with result, and if positive correlated, change corr to 1, if negative correlated, change corr to -1

- logistic regression -- change a function, from glm to logis -- need additional research

**Paper outline:**  
- abstract

- introduction

- background information

- counter status (related or previous researches of the topic, references) (online papers)

- what am i going to do -- goals of the research, targets to accomplish

- data treatment, data structure

- data acquiring, initial structure

- covert initial structure for the use of this research, methodologies

- data information

- platform info

- numb of observation

- split of data

- summary (data summary, basic statistics)

- methodology of the model approach (no actual work of mine included, concepts)

- logistic regression

- concept of logistic regression

- measure of index, accuracy and area under curve

- Bayesian optimization

- parallel with logistic regression

- xgboost -- def and concepts (陈天奇)

- model results and analysis

- represent results using forms and tables

- format in excel and paste to word documents

- conclusion and discussion

- conclusion

- discussion

- time effect

- pros and cons

- potential improvements

-

- work cited

- train test split to 70?

GBM - gradient boost machine

陈天奇：based on gbm, what if values that are not available appears (NA)

How to apply extreme boost and bayesian optimization

(under thesis)

Game result

横轴population

纵轴

Ks gains table - roc table