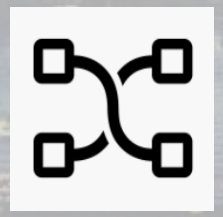
2019.12.20

Soccer Match Result Prediction and its Application

GROUP 12

INDEX

Data & Challenges



Models

Experiment Results

Conclusion

Future Works

Individual Roles

Data & Challenges

EPL Dataset

- 2008~2018
- 3690 rows
- Match history features
- Match bet features
- Target : scores or H/D/A

Challenges

- Noisy Data
- May easily Over-fit*!!*

Models

Models	Conditions & Hyperparameters
Linear Regression	– simple gradient descent – (+) regularization : RIDGE regression
KNN	– Classification & Regression – K = 11
Kernel Regression	– RBF Kernel – σ = 0.5
Logistic Regression	– one-vs-all classifier system – simple gradient descent
Linear SVM	– C=0.01 – one-vs-all classifier system
MLP Classifier	– one hidden layer [64] with dropout [p=0.3] – simple uniform initialization >> Xavier initialization – simple gradient descent >> NAG

Experiment Results

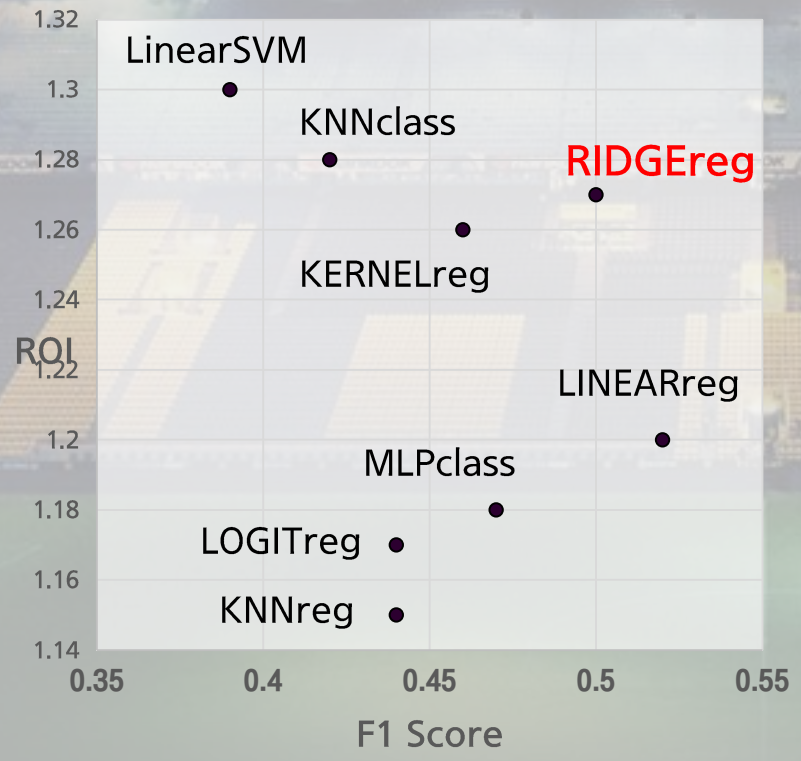
	MSE	MAE	Accuracy	F1	ROI
BL-SVM	-	-	0.4500	0.28	-
BL-MLP	-	-	0.5947	0.69	-
LINEARreg	1.47	0.92	0.5383	**0.52**	1.20
RIDGEreg	1.50	0.92	0.5306	**0.50**	1.27
KERNELreg	1.53	0.93	0.5230	0.46	1.26
KNNreg	1.65	0.97	0.4949	0.44	1.15
KNNclass	-	-	0.5255	0.42	**1.28**
LOGITreg	-	-	0.5536	0.44	1.17
LIN SVM	-	-	0.5510	0.39	**1.30**
MLPclass	-	-	0.5638	0.47	1.18

$$ROI = \frac{\sum_i^N 1(\hat{y}_i == y_i) * odds_i * bet}{\text{bet} * \text{N}} - 1$$

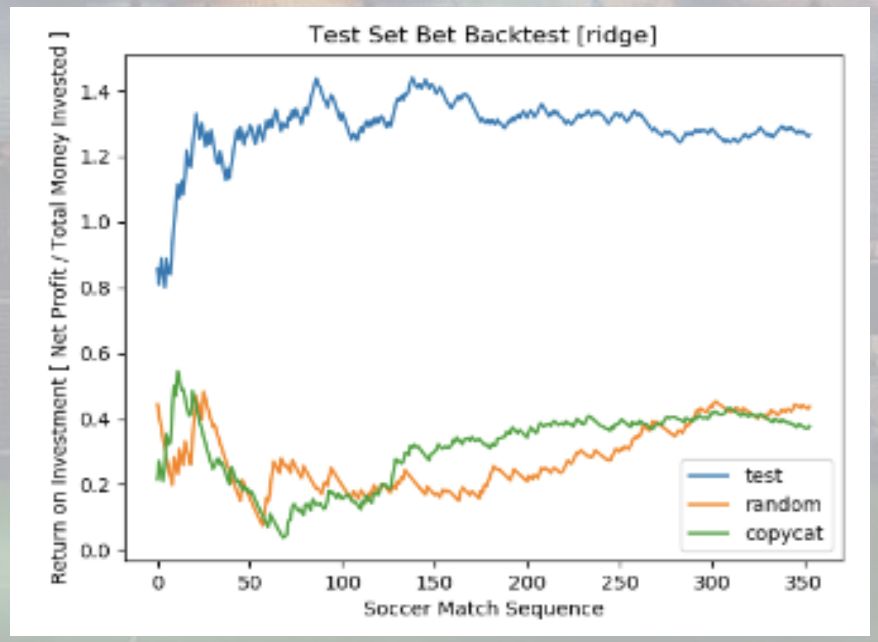
→ Profitability

Experiment Results

Graph



F1 & ROI



Best : RIDGE!!

Conclusion & Future work

Conclusion

- ✓ Simple models work better?
- ✓ There is no free lunch*!*

Future work

- ✓ Incorporate player information into data
- ✓ Reflect profitability into model loss function

Individual Roles

HyunHo Choi 2013 120 315	Kernel Regression & KNN
HyeongKyu Choi 2015 120 300	MLP Classifier
JaeHyun Lee 2015 170 740	SVM Classifier
JuHyeon Shin 2016 160 030	Linear Regression & Ridge
JiHwan Park 2017 320 151	Logistic Regression

Soccer Match Result Prediction

Thank You

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Q & A

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