## BP Neural Network

Predictor, 3 class: y=1 if settle of five days later is 1% larger than today’s settle

y=-1 if settle of five days later is 1% smaller than today’s settle

y=0 if settle of five days later is within 1% of today’s settle

Sentiment score: gather every day’s twitters with respect to numbers of retweets and favorite

mean(score \* (retweet + favorite + N)), where N = 10

Hidden layer: 3, each with 10 nodes

Variable expansion: settle -> difference from seq(1,120,2) days ago

sentiment -> moving average from seq(5, 60, 5) ago

Number of each approach: 30

Size of mini-batch: 20

## Boosting Adaline

Predictor, 3 class: y=1 if settle of five days later is larger than today’s settle

y=0 if settle of five days later is smaller than today’s settle

Sentiment score: gather every day’s twitters with respect to numbers of retweets and favorite

mean(score \* (retweet + favorite + N)), where N = 10

Num of classifiers: 10

Variable expansion: settle -> difference from seq(1,120,2) days ago

sentiment -> moving average from seq(5, 60, 5) ago

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| --- | --- | --- | --- | --- | --- | --- |
| ML Technique | P1 | Annualized return in training | Annualized return in testing | AUPRC in training | AUPRC in testing |  |
| BP neural network | 33.1066% | 7.0068% | 6.5136% | (3 class) | (3 class) |  |
| Boosting Adaline | 62.9025% | 2506.80% | 27.1708% | 1 | 0.5245 |  |

