

Classification Result:

[cur + pre day content scores] feature
[Decision tree]

Source: yahoo.com

Score type: content_scores

	precision	recall	f1-score	support
0	0.55	0.33	0.41	18
1	0.37	0.58	0.45	12
avg / total	0.47	0.43	0.43	30

Accuracy Score: 0.43333333333333335

Source: businessinsider.com

Score type: content_scores

	precision	recall	f1-score	support
0	0.62	0.67	0.65	15
1	0.44	0.40	0.42	10
avg / total	0.55	0.56	0.56	25

Accuracy Score: 0.56

Source: marketwatch.com

Score type: content_scores

	precision	recall	f1-score	support
0	0.47	0.35	0.40	20
1	0.28	0.38	0.32	13
avg / total	0.39	0.36	0.37	33

Accuracy Score: 0.36363636363636365

All three news sources:

	precision	recall	f1-score	support
0	0.58	0.55	0.56	53
1	0.37	0.40	0.38	35

avg / total	0.50	0.49	0.49	88
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Accuracy Score: 0.48863636363636365

Without market watch:

	precision	recall	f1-score	support
0	0.69	0.55	0.61	33
1	0.48	0.64	0.55	22

avg / total	0.61	0.58	0.59	55
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Accuracy Score: 0.5818181818181818

[random forest]:

Source: yahoo.com

Score type: content_scores

	precision	recall	f1-score	support
0	0.57	0.44	0.50	18
1	0.38	0.50	0.43	12

avg / total	0.49	0.47	0.47	30
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Accuracy Score: 0.4666666666666667

Source: businessinsider.com

Score type: content_scores

	precision	recall	f1-score	support
0	0.60	0.60	0.60	15
1	0.40	0.40	0.40	10

avg / total	0.52	0.52	0.52	25
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Accuracy Score: 0.52

Source: marketwatch.com

Score type: content_scores

	precision	recall	f1-score	support
0	0.64	0.35	0.45	20
1	0.41	0.69	0.51	13

avg / total	0.55	0.48	0.48	33
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Accuracy Score: 0.48484848484848486

All three news source:

	precision	recall	f1-score	support
0	0.64	0.43	0.52	53
1	0.42	0.63	0.51	35

avg / total	0.55	0.51	0.51	88
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Accuracy Score: 0.5113636363636364

Without market watch:

	precision	recall	f1-score	support
0	0.62	0.61	0.62	33
1	0.43	0.45	0.44	22

avg / total	0.55	0.55	0.55	55
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Accuracy Score: 0.5454545454545454

[Naive bayes]

1.Source: yahoo.com

Score type: content_scores

	precision	recall	f1-score	support
0	0.59	0.72	0.65	18
1	0.38	0.25	0.30	12

avg / total	0.50	0.53	0.51	30
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Accuracy Score: 0.5333333333333333

2.Source: businessinsider.com

Score type: content_scores

	precision	recall	f1-score	support
0	0.40	0.13	0.20	15
1	0.35	0.70	0.47	10

avg / total	0.38	0.36	0.31	25
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Accuracy Score: 0.36

3.Source: marketwatch.com

Score type: content_scores

	precision	recall	f1-score	support
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0	0.67	0.20	0.31	20
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1	0.41	0.85	0.55	13
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avg / total	0.56	0.45	0.40	33
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Accuracy Score: 0.45454545454545453

All three news sources:

	precision	recall	f1-score	support
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0	0.69	0.45	0.55	53
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1	0.45	0.69	0.55	35
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avg / total	0.59	0.55	0.55	88
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Accuracy Score: 0.5454545454545454

Without market watch:

	precision	recall	f1-score	support
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0	0.58	0.55	0.56	33
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1	0.38	0.41	0.39	22
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avg / total	0.50	0.49	0.49	55
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Accuracy Score: 0.4909090909090909

[Linear SVM]

1. Source: yahoo.com

	precision	recall	f1-score	support
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0	0.67	0.22	0.33	18
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1	0.42	0.83	0.56	12
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avg / total	0.57	0.47	0.42	30
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Accuracy Score: 0.4666666666666667

2. Source: businessinsider.com

	precision	recall	f1-score	support
0	0.50	0.33	0.40	15
1	0.33	0.50	0.40	10
avg / total	0.43	0.40	0.40	25

Accuracy Score: 0.4

3. Source: marketwatch.com

	precision	recall	f1-score	support
0	0.00	0.00	0.00	20
1	0.38	0.92	0.53	13
avg / total	0.15	0.36	0.21	33

Accuracy Score: 0.36363636363636365

All three news sources:

	precision	recall	f1-score	support
0	0.50	0.08	0.13	53
1	0.39	0.89	0.54	35
avg / total	0.46	0.40	0.29	88

Accuracy Score: 0.3977272727272727

Without market watch:

	precision	recall	f1-score	support
0	0.62	0.30	0.41	33
1	0.41	0.73	0.52	22
avg / total	0.54	0.47	0.45	55

Accuracy Score: 0.4727272727272727

[title_score + firstP_score + content_score as 3 features]

[Linear SVM]

Source: yahoo.com

	precision	recall	f1-score	support
0	0.71	0.28	0.40	18
1	0.52	0.88	0.65	16
avg / total	0.62	0.56	0.52	34

Accuracy Score: 0.5588235294117647

Source: businessinsider.com

	precision	recall	f1-score	support
0	0.45	0.29	0.36	17
1	0.33	0.50	0.40	12
avg / total	0.40	0.38	0.37	29

Accuracy Score: 0.3793103448275862

Source: marketwatch.com

	precision	recall	f1-score	support
0	0.00	0.00	0.00	20
1	0.43	0.88	0.58	17
avg / total	0.20	0.41	0.27	37

Accuracy Score: 0.40540540540540543

All three news sources + all companies:

	precision	recall	f1-score	support
0	0.50	0.18	0.27	22
1	0.44	0.78	0.56	18
avg / total	0.47	0.45	0.40	40

Accuracy Score: 0.45

Without market watch:

	precision	recall	f1-score	support
0	0.56	0.23	0.32	22
1	0.45	0.78	0.57	18
avg / total	0.51	0.47	0.43	40

Accuracy Score: 0.475

[Naive bayes]

Source: yahoo.com

	precision	recall	f1-score	support
0	0.75	0.33	0.46	18
1	0.54	0.88	0.67	16
avg / total	0.65	0.59	0.56	34

Accuracy Score: 0.5882352941176471

Source: businessinsider.com

	precision	recall	f1-score	support
0	0.25	0.06	0.10	17
1	0.36	0.75	0.49	12
avg / total	0.30	0.34	0.26	29

Accuracy Score: 0.3448275862068966

Source: marketwatch.com

	precision	recall	f1-score	support
0	0.45	0.25	0.32	20
1	0.42	0.65	0.51	17
avg / total	0.44	0.43	0.41	37

Accuracy Score: 0.43243243243243246

All three news sources + all companies:

	precision	recall	f1-score	support
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0	0.36	0.18	0.24	22
1	0.38	0.61	0.47	18

avg / total	0.37	0.38	0.34	40
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Accuracy Score: 0.375

Without market watch:

	precision	recall	f1-score	support
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0	0.56	0.23	0.32	22
1	0.45	0.78	0.57	18

avg / total	0.51	0.47	0.43	40
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Accuracy Score: 0.475

[Decision tree]

Source: yahoo.com

	precision	recall	f1-score	support
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0	0.50	0.39	0.44	18
1	0.45	0.56	0.50	16

avg / total	0.48	0.47	0.47	34
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Accuracy Score: 0.47058823529411764

Source: businessinsider.com

	precision	recall	f1-score	support
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0	0.53	0.59	0.56	17
1	0.30	0.25	0.27	12

avg / total	0.43	0.45	0.44	29
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Accuracy Score: 0.4482758620689655

Source: marketwatch.com

	precision	recall	f1-score	support
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0	0.50	0.45	0.47	20
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1	0.42	0.47	0.44	17
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avg / total	0.46	0.46	0.46	37
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Accuracy Score: 0.4594594594594595

All three news sources + all companies:

	precision	recall	f1-score	support
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0	0.53	0.41	0.46	22
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1	0.43	0.56	0.49	18
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avg / total	0.49	0.47	0.47	40
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Accuracy Score: 0.475

Without market watch:

	precision	recall	f1-score	support
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0	0.65	0.50	0.56	22
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1	0.52	0.67	0.59	18
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avg / total	0.59	0.57	0.57	40
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Accuracy Score: 0.575

[random forest]

1.Source: yahoo.com

	precision	recall	f1-score	support
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0	0.58	0.39	0.47	18
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1	0.50	0.69	0.58	16
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avg / total	0.54	0.53	0.52	34
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Accuracy Score: 0.5294117647058824

2.Source: businessinsider.com

	precision	recall	f1-score	support
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0	0.47	0.41	0.44	17
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1	0.29	0.33	0.31	12
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avg / total	0.39	0.38	0.38	29
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Accuracy Score: 0.3793103448275862

3.Source: marketwatch.com

	precision	recall	f1-score	support
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0	0.53	0.50	0.51	20
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1	0.44	0.47	0.46	17
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avg / total	0.49	0.49	0.49	37
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Accuracy Score: 0.4864864864864865

All three news sources + all companies:

	precision	recall	f1-score	support
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0	0.60	0.41	0.49	22
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1	0.48	0.67	0.56	18
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avg / total	0.55	0.53	0.52	40
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Accuracy Score: 0.525

Without market watch:

	precision	recall	f1-score	support
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0	0.69	0.41	0.51	22
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1	0.52	0.78	0.62	18
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avg / total	0.61	0.57	0.56	40
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Accuracy Score: 0.575

Linear Regression result:

3/10 - 4/10 as training, predict 4/11 - 4/26

[cur + pre day sentiment score](only content score)

yahoo.com:

R2 score: -0.012914457402509738

mean square error: 34.64665288750882

businessinsider.com:

R2 score: -0.06780091526725185

mean square error: 34.66100221185722

marketwatch.com:

R2 score: -0.03642837732907234

mean square error: 30.977331600707576

Use all data:

R2 score: -0.0022793444989646083

mean square error: 32.18520774351612

Without market watch:

R2 score: -0.013257731751716184

mean square error: 33.88904700289541

[title_score + firstP_score + content_score as 3 features]

yahoo.com:

R2 score: 0.04885101433035077

mean square error: 29.96993308163232

businessinsider.com:

R2 score: -0.2815104354909401

mean square error: 41.20065194317634

marketwatch.com:

R2 score: -0.10515236251783722

mean square error: 30.740361166533248

Aggregate all news sources and all companies as a whole training set

R2 score: -0.05955337920921777

mean square error: 29.816804040823833

Without market watch:

R2 score: -0.14934078522775018

mean square error: 32.34350401000003