

CS410 - Group Project

Purpose

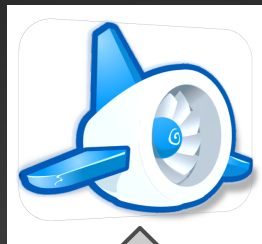
Verify the accuracy and validity of different news sources regarding Financial Status of Companies.



Existing Resources

- Google Finance
- Twitter Market
- <http://www.investopedia.com/university/technical/techanalysis8.asp> - Tool for technical analysis of charts.

Implementation



List → JSON {Dictionaries}

Scoring Function

JSON → List

Data Conversion + Processing

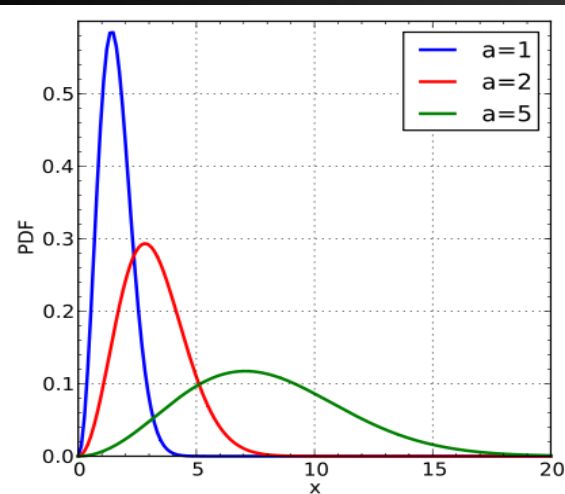


MATHEMATICAL IMPLEMENTATION

$$\text{Stock_Value} = \sum (\text{SD}[t] - \text{SD}[t-1]) / \text{SD}[t] \cdot 2 \cdot \sqrt{2} / \sqrt{\pi} \cdot e^{-(t/\text{max_t})^2} \cdot (t/\text{max_t})^2 \cdot (1 / \log_2(t + 1))$$

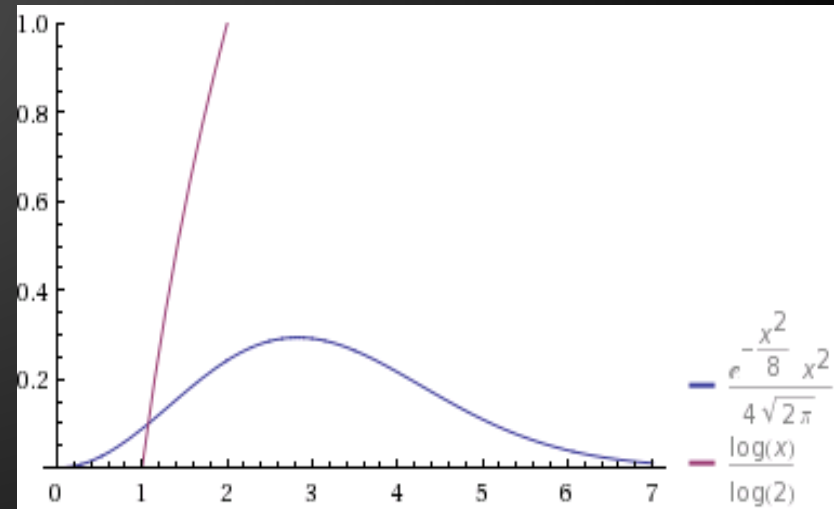
Penalties \rightarrow Boltzmann Distribution, Log Penalty.

$$F_R = \alpha \cdot (\text{Sent_Value} / \text{Stock_Value}) + (1 - \alpha) \cdot (\text{Rel_Value}) \quad \{\alpha = .4\} \text{ (Smoothed)}$$



$\rightarrow a (= t_{\text{max}}) = 2 \text{ weeks}$

\rightarrow Plot - Penalty Functions



Effectiveness

- Title != Accuracy of Article.
- => Focus on Accuracy + Relevance, No Focus on Raw TF + Title.
- Our function does NOT scan through each article => Easy crawling and computation (But lots of computation).

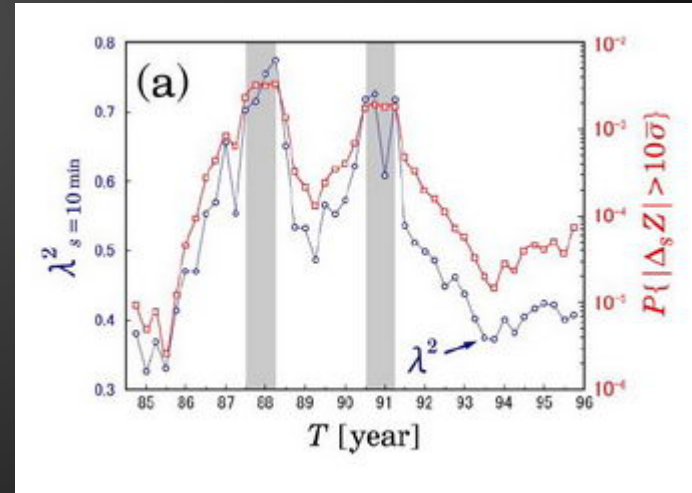
Improvement Suggestions

- **Speed** - Computational time high.
- **Dependency on API** - NLP requirement high.
- **News Corpus** - Limited. Time scale is small.
- **UI** - Not user friendly, Need more storage to create Graphs.

Major Improvement Option:

- Make Stock Prediction using the Data by combining with HMM & Fourier Analysis.

Monday, October 19, 1987 ->



Demo

Search Engine

🔍 apple

Apple Inc.

Apple Store

Apple Corps

Apple Records

iTunes Store

British Rail

Weblogs, Inc.

Apple Bank for Savings

Mountain Apple Company

Apple Specialist

Apple Pips

Shenandoah Apple Blossom Festival

Big Apple Bagels

Golden Apple Comics

Big Apple Donuts and Coffee

- Daimler to Cut Mercedes-Benz Parts Prices in China By Unkown With Score -2.87507748572
- Exclusive: Goldman group set to buy message system as alternative to Bloomberg - sources By Unkown With Score -21.981242450814996
- Wall St banks to buy non-Bloomberg message system By Unkown With Score -23.288898997485
- Microsoft Sues Samsung Over Patent Licensing Agreement By Unkown With Score -9.50069803839
- APNewsBreak: Corps agrees to monitor dam pollution By Unkown With Score 0
- Apple \$450 million e-book settlement wins court approval By Unkown With Score -34.589717847266
- Apple weighed down in after hours on iPad sales drop By Unkown With Score -9.84234320645
- Apple Hints New Products Near With Bigger iPhones Looming By Unkown With Score -57.61731739553999
- NY investigates mortgage firm's \$86 million sale By Unkown With Score -15.608468719240001
- Apple pushes S&P 500 to record close; Boeing hits Dow By Unkown With Score -14.793266763670939
- Apple margin concerns fade, focus shifts to iPhone launch By Unkown With Score -39.56866322321667
- Apple wins court approval to settle e-book claims for US\$450m By Unkown With Score -31.8347380384
- U.S. Equity Futures Eye Higher Opening By Unkown With Score -18.31103479878
- TECH STOCKS: Apple, Microsoft On The Rise With Earnings On Tap By Unkown With Score 4.256044784199332
- Chenming expects high operating profit on Apple orders By Unkown With Score 12.9567456762

Q&A

- Design
- Implementation
- Challenges