

Student Exchange Program
The University of Sydney (USYD), Discipline of Finance
International Program Development Fund (IPDF)

Diploma Theses Proposals 2010 Semester 2

Understanding People Power on the Web in the Financial Domain

Understanding meanings, emotions and positions in written text is an essential part of human communication. Due to the sheer volume of online activities, without taking advantage of the computers' processing power, governments and businesses will lose the opportunities of tracking public opinions, and understanding consumer and investor sentiments. This could lead to detrimental effects if governments, businesses and investors fail to moderate these public channels and let through dangerous rumours. This research is addressing this pressing need in understanding the people power on the Web, using computer aided techniques, with a particular focus in the financial domain.

Such understandings will help individual and institutional investors correctly customise their investment strategies to address the effects of information dissemination on stock prices. Understanding public opinions and sentiment of information release will also enable authorities to have a bird's eye view on any parts of the investment community. For example, how does the news on the stimulus package affect stock performance?

In this research project a variety of sentiment analysis text mining techniques is applied to a large sample of newspaper articles from different sources. A sentiment extraction prototype should be developed. The prototype will utilize existing data mining software such as Weka and any other suitable software packages that may move beyond naïve approaches. Whilst the specific experiment to be considered is open to negotiation, a typical example includes the extraction of sentiment from the newspaper sample followed by an examination of its accuracy gauged by share price reaction. The training of the extraction mechanism may involve the use of a set of manually classified newspaper articles.

For some information on previous work completed in this area see:

<http://www.icm.tugraz.at/home/cguetl/projects/StockMarketSentimentAnalysis>

Further information:

News Sentiment Analysis Techniques:

<http://www.sentimentnews.com/2009/08/news-sentiment-analysis-techniques.html>

Weka data mining software:

<http://www.cs.waikato.ac.nz/ml/weka/>

SentiWordNet, a lexical resource for opinion mining:

<http://swn.isti.cnr.it/>

Supervisor USYD: Henry Leung

Supervisor TUG: Christian Gütl

Procedure for Pre-selection (must be written in English)

1. Prepare a Short CV including interests, programming and software design skills, practical work experiences, language skills and other relevant information
2. Progress Report (Overview) of the study program and average performance level
3. Short Application Letter (1 page) stating motivation/reasons why to apply for the Thesis position and outlining interest in the topics of the theses proposals

Procedure for Scholarship

1. Letter of Acceptance from supervisor of Hosting University (result of pre-selection)
2. Application for Scholarship at Graz University of Technology

Time Schedule

- March 20th, 2010 Application as PDF File via email to cguetl@iicm.edu
- March 22th, 2010 Preliminary decision by supervisors and letter of agreement for supervision by Discipline of Finance, The University of Sydney
- March 31st, 2010 Application for scholarship Karin Leber, Office of International Relations, Graz University of Technology
- Master Thesis at Hosting University (USYD) from July 2010 until December 2010

Further Information:

Local Contact:

Christian Gütl, cguetl@iicm.edu

Information about scholarship:

Karin Leber, karin.leber@tugraz.at

http://portal.tugraz.at/portal/page/portal/Internationale_Beziehungen/Outgoings/KUWI

Information about The University of Sydney, NSW, Australia

<http://www.usyd.edu.au>