

Workshop Series on Recent Developments in Business Analytics and New Research Directions

Workshop on Social Media Analytics

29 November 2018

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29th November 2018 (Thursday), 2:30pm - 4:20pm

Time	Activity
14:30 – 14:40	<i>Opening Remarks</i>
14:40 – 15:30	Prof. Ying CHEN Associate Professor, National University of Singapore <i>“Topic Sentiment Asset Pricing with DNN Supervised Learning”</i>
15:30 – 16:20	Prof. Philip YU Associate Professor, The University of Hong Kong <i>“Detecting Comments Showing Risk for Suicide in Social Media”</i>

Topic Sentiment Asset Pricing with DNN Supervised Learning

Prof. Ying CHEN, National University of Singapore

Abstract

We develop an innovative deep neural network (DNN) supervised learning approach to extracting insightful topic sentiments from analyst reports at the sentence level and incorporating this qualitative knowledge in asset pricing and portfolio construction. The topic sentiment analysis is performed on 113,043 Japanese analyst reports and the topic sentiment asset pricing model delivers superior predictive power on stock returns with adjusted R^2 increasing from 1.6% (benchmark model without sentiment) to 14.0% (in-sample) and 13.4% (out-of-sample). We find that topics reflecting the subjective opinions of analysts have greater impact than topics of objective facts and justification of the quantitative measures. This is a joint work with Hitoshi Iwasaki. The paper is available at

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3228485

About Prof. Ying CHEN

Ying Chen is a financial statistician and data scientist. She develops statistical modelling and machine learning methods to analyze nonstationary, high frequency and large dimensional complex data such as cryptocurrency, limit order book, and renewable energy. She also works on business intelligence, forecasting, text mining and sentiment analysis, and network analysis. Chen is Associate Professor in Department of Statistics and Applied Probability, and Department of Economics (Courtesy appointment, April 1, 2018 to March 31, 2021) at the National University of Singapore. She is also Faculty member in NUS Graduate School for Integrative Sciences and Engineering since July 2016. Chen is Associate Editor of *Statistica Sinica* (August 1, 2017 to July 31, 2020), *Statistics and Its Interface*, *Computational Statistics* and the *Journal Operations Research and Decisions*. Chen is ISI Elected Member since March 2016. She is Scientific Secretary and member of Executive Committee of the International Association for Statistical Computing (IASC) from July 2017 to June 2019 and Board of Director ordinary member of the Asian Regional Section (ARS) of IASC. She is regular member of the Advisory Board of Institute of Statistical Mathematics, Japan from 1 April 2018 to 31 March 2020.

Detecting Comments Showing Risk for Suicide in Social Media

Prof. Philip YU, The University of Hong Kong

Abstract

Suicide is a serious public health concern globally. Suicide prevention is therefore an important topic in our society. The use of text mining methods provides a relatively quick and meaningful tool for detecting suicidal ideation in social media. This paper proposed text mining techniques to classify comments on social media that indicate suicidal risk. Based on word vector feature, classification algorithms such as SVM, AdaBoost, Random Forest, and LSTM are employed to detect the comments' risk level. To tackle the imbalanced problem of the dataset, topic seed words and focal loss are introduced to training models. Experiments show that the LSTM model with topic seed word filter and focal loss can achieve satisfied testing classification results (84.3% g-mean). This is a joint work with Jiahui Gao and Qijin Cheng.

About Prof. Philip YU

Philip L.H. Yu is an Assistant Dean (Taught Postgraduate Programmes), Faculty of Science and Associate Professor at the Department of Statistics and Actuarial Science of the University of Hong Kong. He is also the Chairperson of the Asian Regional Section of the International Association for Statistical Computing and a member of Technical Committee of Computational Finance and Economics, IEEE Computational Intelligence Society. His areas of research interests are AI and big data analytics, preference learning, data mining and machine learning, text analytics, and financial and risk management. He has written two research monographs and published more than 100 publications in conference proceedings and international refereed journals.