



AI and Sentiment Analysis in Finance



7-8 March 2018
Hong Kong

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Background

AI and Sentiment Analysis in Finance Hong Kong, 7-8 March 2018

Artificial Intelligence is deemed to be the main driver of the 4th Industrial Revolution. Investment in AI has grown at a phenomenal rate with companies investing \$26-39bn in 2016. Adoption in 2017, however, remains low. As a result, this has spurred companies from every industry to seize the trend and innovate – from virtual assistants to cyber security to fraud detection and much more. The majority of C-level executives have identified and agree that AI will have an impact on their industry. However, only 20% of C-level executives admit they have already adopted AI technology in their businesses, according to research conducted by McKinsey. So, there is plenty of scope for change and improvement. The Finance industry is anticipated to lead the way in adoption of AI with a significant projected increase in spending over the next three years.

Until recently, practitioners have faithfully relied upon neo-classical models to measure performance, whether it's in financial organisations or marketing corporations. AI is the new technology that offers an automated solution to these processes. It has the capability to replicate cognitive decisions made by humans and also remove behavioural bias adherent to humans.

In order to process and understand the masses of data out there, machine learning and sentiment analysis have become essential methods that open the gateway to data analytics. To keep up with the ever-expanding datasets, it is only natural that the techniques and methods with which to analyse them must also improve and update. Application of AI in the financial service industry is fundamental to the competitiveness and automation process for years to come. This event is a sophisticated conference that not only interrogates and explores the implications of AI in the financial services industry but also goes on to identify the regional business and investment opportunities.

Additionally, this conference will help you to demystify the buzz around AI and differentiate the reality from the hype. Learn about how you can benefit from the unprecedented progress in AI technologies at this conference. Participants will be presented with real insights on how they can exploit these technological advances for themselves and their companies.

Topics Covered Include:

- ✓ AI Experience and Fintech – Disrupting our world
- ✓ Trends & Opportunities: a regional ecosystem to meet the global needs, M&A Hotspots, Where is China!
- ✓ Wealth Management, Family office, expectations of the modern HNWIs and global institutions
- ✓ Fundamentals and applications of machine learning and deep learning
- ✓ Pattern classifiers, Natural Language Processing (NLP) and AI applied to data, text, and multi-media
- ✓ Sentiment scores combined with neo-classical models of finance
- ✓ Financial analytics underpinned by qualitative and quantitative methods
- ✓ Predictive and normative analysis applied to finance
- ✓ Behavioural and cognitive science
- ✓ The future of AI and its impact on industries

Why participate?

- ✓ Hear from leading subject experts from UK, US, Europe and India/Hong Kong
- ✓ Programme includes the latest state-of-the-art research, practical applications and case studies
- ✓ Expect technical and in-depth presentations and discussions; we like to stimulate your brain cells!
- ✓ Excellent networking opportunities throughout the days with all participants, including presenters, investors and exhibitors.

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Programme

Keynote 1 - Towards Empathetic Human-Robot Interactions

Professor Pascale Fung, Department of Electronic and Computer Engineering, Hong Kong University of Science and Technology, Hong Kong

“Sorry I didn’t hear you” may be the first empathetic utterance by a commercial machine. As people increasingly interact with voice and gesture controlled machines, they expect the machines to recognize different emotions, and understand other high-level communication features such as humor, sarcasm and intention. To make such communication possible, the machines need an empathy module - a software system that can extract emotions from human speech and behavior and accordingly decide the correct response. This talk presents our work in the areas of deep learning of emotion and sentiment recognition, as well as humor recognition, using signal processing techniques, sentiment analysis and machine learning. It gives an overview of the future direction of android development and how it can help improve people's lives.

Daily Trade Signals using Sentiment Analysis and Stochastic Dominance for Downside Risk Control

Xiang Yu, Business Development Techno Executive, and Gautam Mitra, CEO/Director, OptiRisk Systems/UCL, UK

We have created an innovative and dynamic trading strategy for equities, with a particular focus on controlling downside risk. The mathematical concept behind the approach is called stochastic dominance, where investment decisions are based on distributions rather than moments. A major contribution of news sentiment is in the prediction of future distributions. Regression analysis on news sentiment and regime switching models are employed to digest market moods and account for changing market situations.

Predicting Corporate Default using Text of Corporate Filings

Ashok Banerjee, Departmental Head of Finance and Control, Indian Institute of Management, Calcutta (IIMC), India

Banks and financial institutions in emerging markets are saddled with a huge proportion of bad loans. Banking regulations require lenders to provide for troubled debt which adversely affects the profitability of banks. The capital market also reacts negatively to such write-offs of big ticket debts. Banks are, therefore, putting significant resources into developing early warning signals to arrest eventual default. The financial institutions use a wide range of default prediction models to estimate the loan loss. These models use data from financial statements and the market. The present study shows that such models fail to provide effective early warning signals. We use annual reports of companies to develop a default model which is predictive and hence has the capability of providing early warning signals. Using information from Directors' Reports, Audit Reports and notes to accounts, our model successfully discriminates the 'good' firms from the 'bad' ones.

Approaches to Market Forecasting with Media Sentiment Data

Richard Peterson, CEO, MarketPsych Data, USA

Dr. Peterson will describe the unique characteristics of media sentiment data and approaches to financial price prediction with this data. The basics of media sentiment data, various modeling approaches, and their results (including live trading results) will be described in this talk. Viewers will gain an understanding of real-world modeling tips and techniques when dealing with noisy and inconsistent data such as media sentiment streams.

Title: TBA

Juho Kannianen, Professor of Financial Engineering at the Tampere University of Technology

I just called to say I'm bullish – Global analyst conference calls and stock returns

Gurvinder Brar, Macquarie Research

Recent academic research (and our own work on US data) have found that analyst conference calls convey useful information not contained in earnings numbers and analyst forecasts. The slow reaction of markets to that type of information implies that sentiment, as expressed by analysts and management during the call, predicts returns. This effect is distinct from the well known post earnings announcement drift. We collected call transcripts for global companies from Factset going back to 2002. Using text mining techniques, we measure the tone of the management discussion and Q&A session of each call, with a goal of developing an alpha signal at low frequency. This presentation describes the strategy and findings of our research.

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Extracting Embedded Alpha in Social & News Data Using Statistical Arbitrage Techniques

Arun Verma, Quantitative Researcher, Bloomberg LP

- ✓ Extracting actionable information in the high volume, time-sensitive environment of news and social media stories
- ✓ Using machine learning to address the unstructured nature of textual information
- ✓ Techniques for identifying relevant news stories and tweets for individual stock tickers and assigning them sentiment scores
- ✓ Demonstrating that using sentiment scores in your trading strategy ultimately helps in achieving higher risk-adjusted returns

Networks are like onions: Practical Deep Learning with TensorFlow

Barbara Fusinska, Data Scientist

Deep learning is the area that wins over the field of Artificial Intelligence. By using libraries like TensorFlow, it is now available to the wider audience. In this tutorial, Barbara will walk the audience through the process of creating several types of neural networks. The session will start with explaining key concepts of deep learning and introducing datasets the computation will be performed on. Along the way, attendees will have the practical opportunity to use TensorFlow to build deep networks, train them and evaluate the results. After the session, participants will become familiar with how to use TensorFlow when shaping the architecture of neural networks. By the hands-on form of the tutorial, the audience will have the chance to gain some first hand experience of how to apply deep learning to computer vision and natural language processing tasks.

Using Machine Learning to Trade Stock Markets

Humberto Brandão, Data scientist

- ✓ The importance of a high-quality simulation process;
- ✓ The importance of a good validation process;
- ✓ Showing good and bad results in real stock markets applying Machine Learning;
 - Market makers;
 - Statistical arbitrage;
- ✓ Showing the results of my methods in crowd-sourcing competitions

Title: TBA

Sebastien Lleo, NEOMA Business School

Speakers' Profiles



Ashok Banerjee

Ashok Banerjee is currently the Departmental Head of Finance and Control, at the Indian Institute of Management (IIM) Calcutta. He joined IIM Calcutta as Professor (Finance and Control) in 2004 and has been instrumental in setting up the state-of-the-art Financial Research and Trading Laboratory (Finance Lab) there. He is also the founding member of Indian Finance Association.



Humberto Brandão

Humberto Brandão is a data scientist that loves complex and real world problems related to Machine Learning and Combinatorial Optimization. He is a partner of two start-ups that uses cutting-edge research to solve real world problems. He works in the Federal University of Alfenas researching about quantitative trading using data science.



Pascale Fung

Pascale Fung is a Professor of Electronic and Computer Engineering at Hong Kong University of Science and Technology. She was elected Fellow of the Institute of Electrical and Electronic Engineers for her contributions to human-machine interactions. She is one of the founding faculty members of the Human Language Technology Center (HLTC) at HKUST, Director of InterACT@HKUST, and the founding chair of the Women Faculty Association at HKUST.

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Speakers' Profiles



Barbara Fusinska

Barbara Fusinska is a Data Scientist with strong software development background and over than thirteen years of both commercial and academic experiences. Work on her master's degree dissertation and research activities have brought her focus to the Data Science field. She believes in the importance of data and metrics when growing a successful business and the significance that Machine Learning and Artificial Intelligence bring when gaining insights and drawing conclusions. She is passionate about exploring, continually learning and sharing her knowledge via writing and speaking at conferences with the aim of helping others understand the Data Science area.



Juho Kanninen

Juho Kanninen is Professor of Industrial Management (Financial Engineering) at Tampere University of Technology. He is currently co-ordinating two EU projects on Big Data in Finance and High Performance Computing in Finance.



Sebastien Lleo

Sebastien Lleo is an Associate Professor in the Finance Department at NEOMA Business School and a tutor on the Certificate in Quantitative Finance at FitchLearning. He was previously Research Associate at Imperial College London in the UK, worked for in the investment industry in Canada and consulted on risk management and asset allocation projects in Canada and the UK. His main interests include investment management, stochastic control and stochastic analysis, data science and data analytics, behavioural finance, risk management. Sebastien holds a PhD in Mathematics from Imperial College London (UK), a MBA from University of Ottawa (Canada), and MSc in Management from NEOMA Business School (France). He is also a CFA Charterholder, a Certified Financial Risk Manager, a Professional Risk Manager, and a CQF alumnus.



Gautam Mitra

Gautam Mitra is the founder and the MD of OptiRisk Systems. He is an internationally renowned research scientist in the field of Operational Research in general and computational optimisation and modelling in particular. He has developed a world class research group in his area of specialisation with researchers from Europe, UK, USA and India. He has published five books and over hundred and fifty research articles. He is an alumni of UCL and currently a Visiting Professor of UCL. In 2004 he was awarded the title of 'distinguished professor' by Brunel University in recognition of his contributions in the domain of computational optimisation, risk analytics and modelling. In OptiRisk Systems he directs research and actively pursues the development of the company as a leader in the domain of financial analytics. Professor Mitra is also the founder and chairman of the sister company UNICOM seminars. OptiRisk systems and UNICOM Seminars also have subsidiaries in India. In India and Southeast Asia both the companies are going through a period of organic growth. [Chairperson]



Richard Peterson

Richard Peterson is CEO of MarketPsych Data which produces psychological and macroeconomic data derived from text analytics of news and social media. MarketPsych's data is consumed by the world's largest hedge funds. Dr. Peterson is an award-winning financial writer, an associate editor of the Journal of Behavioral Finance, has published widely in academia, and performed postdoctoral neuroeconomics research at Stanford University.



Arun Verma

Dr. Arun Verma joined the Bloomberg Quantitative Research group in 2003. Prior to that, he earned his Ph.D from Cornell University in the areas of computer science & applied mathematics. At Bloomberg, Mr. Verma's work initially focused on Stochastic Volatility Models for Derivatives & Exotics pricing and hedging. More recently, he has enjoyed working at the intersection of diverse areas such as data science (for structured & unstructured data), innovative quantitative & machine learning methods and finally interactive visualizations to help reveal embedded signals in financial data.



Xiang Yu

Xiang Yu is Business Development Techno Executive at OptiRisk Systems. She has a PhD in Mathematics from Brunel University and Bachelors from Manchester University. Her research interests are in sentiment analysis, predictive analytics and market microstructure and their applications in financial analytics. Xiang and Prof. Mitra are co-editors of the "Handbook of Sentiment Analysis in Finance (published 2016)".

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Tickets

End User: Price per day	Super Early Bird until 12 January 2018	HK\$ 2000
	Early Bird until 9 February 2018	HK\$ 2750
	Standard Price:	HK\$ 3500

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