AI and Sentiment Analysis in Finance

7 March 2018

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Background

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.

Attend this event and earn GARP/CPD credit hours.

UNICOM has registered this program with GARP for Continuing Professional Development (CPD) credits. Attending this program qualifies for 7 GARP CPD credit hours. If you are a Certified Financial Risk Manager (FRM®), please record this activity in your Credit Tracker.

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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.

Application of Generative Adversarial Network (GANs) in algorithmic Trading (TBC)
Mohammad Yousuf Hussain, Senior Technology and Innovation Specialist at HSBC

Natural Language Processing for Event Extraction
Johnson Poh, Head, Data Science, DBS Bank / Adjunct Faculty, Singapore Management University
Much information is embedded within the large volumes of unstructured data that we so often neglect in the implementation of business analytics. How do we seamlessly classify and extract key ideas with automation? In this presentation, we explore the open source tools, algorithms and services that relevant for the design of a reference architecture to surface underlying insights from texture descriptions.

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.

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.

Big Data Problems and Techniques in Finance
Juho Kanniainen, Professor of Financial Engineering, Tampere University of Technology, Laboratory of Industrial and Information Management, Finland
Nowadays, available datasets are so large and complex that such "Big Data" is becoming difficult to process with the current data management tools and methods. This data could provide valuable information to design trading algorithms, manage risks, and supervise markets. At the same time, financial research has been quite slow to embrace the data revolution. This talk elaborates the opportunities and challenges of using data science methods and large data sets in finance-related industries and research.

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

Why algorithmic trading in the real world is so different to academic experiments
Humberto Brandão, Data scientist
It is not difficult to find academic papers showing how to make money easily using algorithmic trading, which includes graphs, statistical tests, etc. However, in real markets, the majority of them cannot be replicated. In this presentation, I will discuss some reasons for this problem and try to explain how to improve validation processes before applying an algotrader in real stock exchanges.

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Speakers' Profiles

Humberto Brandão
Humberto Brandão is the Head of the Research & Development Lab (R&D Lab) at Federal University of Alfenas (Brazil), where he is also a Professor. He has been working on Algorithmic Trading using Machine Learning since 2009. During this period, he created a realistic simulator, which has been used for High-Frequency Trading in Brazil. As a consultant for hedge funds, Humberto has been applying different techniques in order to improve their return and risk over different kind of strategies. Recently, Humberto won several important prizes in competitions related to Algorithmic Trading and 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.

Mohammad Yousuf Hussain
Mohammad Yousuf Hussain, CFA, is a Senior Technology and Innovation Specialist at HSBC. Working in the Applied Innovation and Strategic Investments team, he has designed and delivered a number of artificial intelligence based electronic trading solutions. Previously, he was a Senior Consultant at GreySpark Partners where he delivered projects for UBS, HSBC, Mizuho Securities, Nomura-Instinet, Interactive Brokers and SFC. He developed expertise in assessing trading algorithms by investigating the market abuse incidents for the regulator.

Juho Kanniainen
Juho Kanniainen is Professor of Financial Engineering at the Tampere University of Technology, Laboratory of Industrial and Information Management, Finland. His research agenda is focused on derivative pricing, financial econometrics, order book dynamics and liquidity, and financial networks, with emphasis on big data problems. Dr. Kanniainen has published in many journals in Finance and Engineering, including Review of Finance, Journal of Banking and Finance, and Digital Signal Processing. He has been coordinating two international EU projects, BigDataFinance (www.bigdatafinance.eu) and HPCFinance (www.hpcfinance.eu).

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.

Johnson Poh
Johnson is currently Head Data Science for Big Data Analytics Centre of Excellence at DBS Bank. He holds an adjunct faculty appointment at SMU School of Information Systems where his core focus areas include applied statistical computing, machine learning as well as big data tools and techniques.
An avid programmer and data enthusiast, Johnson enjoys developing apps and data products. Most recently, he was awarded first prize in Singapore's largest coding competition, Hackathon@SG 2015 as well as the CapitaLand Data Challenge 2016. Johnson completed his bachelor's degree at University of California, Berkeley, majoring in the subjects of Pure Mathematics, Statistics and Economics. He received his postgraduate degree in Statistics at Yale 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.

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Speakers' Profiles

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)".

Tickets

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For combined discounted price

For combined discounted price of the conference "AI, Sentiment Analysis in Finance" and the workshop / workshops, please contact aqeela@unicom.co.uk or anirban@unicom.co.uk

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