# MMBD 2020 CONFERENCE PROGRAM

October 18<sup>th</sup>-21<sup>st</sup>, 2020 (GMT+8 Time, Beijing) ONLINE-Microsoft Teams Meeting

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## **Part I Conference Schedule Summary**

MS Teams: h	nttp://www.academicconf.com/teamslink?confname=mmbd2020					
9:00-11:00	MS Teams Online Conference Testing and Ice Breaking					
15:00-17:00 MS Teams Online Conference Testing and Ice Breaking Continued						
Monday, C MS Teams: I	October 19, 2020 http://www.academicconf.com/teamslink?confname=mmbd2020					
The whole m <i>Bangladesh;</i>	orning's session is chaired by Prof. Md. Mamun Habib, Independent University, University of Texas - Arlington (UTA), USA.					
09:50-10:00	<b>Opening &amp; Welcoming Remarks</b> Prof. Jung Wan Lee, Anhui University of Finance and Economics (AUFE), China					
10:00-11:00	<b>Keynote Speech 1:</b> Big Data and Quantamental Investing in China Prof. Zhang Ran, Business School, Renmin University of China, China					
Keynote Speech 2: AI and Knowledge Management and their Advance St for Big Data Technologies1:05-12:05Prof. Madjid Fathi, Director, Institute for Knowledge Based Systems & Knowledge Management; Research Center for Knowledge Management and Integration Systems; University of Siegen, Germany						
12:10-14:00	LUNCH BREAK					
14:00-18:00	:00 Oral Session of Modern Management based on Big Data Part 1					

Tuesday, October 20, 2020

Sunday, October 18, 2020

MS Teams: http://www.academicconf.com/teamslink?confname=mmbd2020

08:30-11:55 Oral Session of Modern Management based on Big Data Part 2

11:55-14:00 **LUNCH BREAK** 

14:00-17:00Poster Session

### Wednesday, October 21, 2020

MS Teams: http://www.academicconf.com/teamslink?confname=mmbd2020

09:00-17:00 Online Conference Closing

## **Part II Opening & Welcoming Remarks**

### **Opening & Welcoming Remarks from Conference Technical Program Committee Chair Prof. Jung Wan Lee**

## School of International Economics and Trade, Anhui University of Finance and Economics (AUFE), China

Dear Valued Visitors, Listeners, Speakers, and Committee Members,

This is Professor Lee, who is the Chair of Technical Program Committee of the 2020 International Conference on Modern Management based on Big Data (MMBD 2020), which was originally scheduled to be held during October 18th-21st, at Beijing, the capital city of China.

Due to COVID-19 is still problematic and travel restrictions in many countries; this planned conference has to be managed by a combined mode of online video presentation and webinar for questions and answers in real-time for the same conference dates.

In the era of big data, modern management is undergoing tremendous changes. Yes, we agree that big data could bring big benefits for governments, society, public sector, private sectors, and individuals as well.

However, the ultimate success of big data technologies may be proportionate to how readily stakeholders embrace the new data-driven mindset.

It is said that much of the movement in big data strategies will depend on factors that are more human than technical. It is more of a culture change; it is not just about technology itself.

The 2020 International Conference on Modern Management based on Big Data (MMBD 2020) aims:

- to share scholarships regarding issues of modern management practices and big data analytics and technologies,

- to offer an excellent opportunity to meet academics, researchers, practitioners, professionals, and experts from around the world, and

- to provide excellent publishing opportunities for scholarly papers, research notes and case studies in the conference proceedings and supporting international journals.

The plenary session of MMBD 2020 will include Keynote Speeches, Invited Speeches, Oral Presentations and Poster Presentations in the form of video presentations and e-poster presentations. Some outstanding scholars from different countries have been attracted to attend MMBD2020 to deliver keynote speeches, including Prof. Madjid Fathi from Institute for Knowledge Based Systems & Knowledge Management; Research Center for Knowledge Management and Intelligent Systems; University of Siegen, Germany, and Prof. Zhang Ran from Business School, Renmin University of China.

I warmly welcome you to join us at the webinar of MMBD2020.

You will not only meet your colleagues from academics and industry but also engage in stimulating discussions based on academic research papers and business practices.

I hope MMBD2020 online conference and webinar allow our international network to stay connected and continue to learn and exchange ideas on this topic.

It is such a pity that COVID-19 bothers our network and community spirits and our daily life, so

many people doubt about whether there is a real sense of community in this neighborhood. However, I strongly believe that, under the strong and responsible leadership of each Government and together with good citizenship, we can defeat the evil. I really hope that everything goes well with the efforts have made so that we can greet each other with a big smile sooner.

Thank you for your guidance and for everyone's everlasting support to MMBD2020 success and reputation for quality in the international community.

I am inviting potential experts in this field whom I believe will strengthen the overall quality of this society. This is a wonderful opportunity for you to receive increased recognition in the international community.

I trust that MMBD2020 will prove their resilience, agility and innovation in this challenging time.

I am also convinced that the undertaken actions of MMBD2020 will allow us to meet in MMBD2021 next year, at Xiamen, China, and we will celebrate the end of this dire period. I hope to see many of you next year in modern China.

On behalf of the conference organizing committee and technical program committee, I take this opportunity to thank all of visitors, listeners, speakers, and committee members for their critical role in bringing success of the conference.

I also would like to thank all the attendees, session chairs, reviewers and local organizing directors for their critical role in bringing together success of the conference.

I would like to thank MMBD2020 Organizing Committee for hosting the conference, and international journals and organizations for supporting and sponsoring success of the conference in many ways.

Lastly, though the direct immediate result of our effort sometimes does not come along in the direction of our wishes, our desire for continuing growth is still full of passion and energy, never being curbed.

We must go forth with every confidence in the direction of our dreams. We as global citizens shall continue to generate the enthusiasm, confidence and self-motivation within ourselves and experience such pride that comes from continually striving for higher levels of competency and standards.

I truly hope that we live together in our hopes and dreams that we can always improve on it and use our skills and abilities toward making a better world.

In making this effort, we learned that many of our friends, colleagues, and people speak determination, perseverance, accountability, responsibility, integrity and excellence.

I wish you best of luck in your future endeavors as I greatly respect your dedication to your family and society for creating shared value for a better world.

Thank you very much. Thank you again. Good bye.

Chair of Technical Program Committee of MMBD2020

Jung Wan Lee, Ph.D.

Professor, Anhui University of Finance and Economics (AUFE), China



## **Part III Keynote Speeches**

### **Keynote Speech 1: Big Data and Quantamental Investing in China**

### Prof. Zhang Ran



Professor, Business School, Renmin University of China, China

**Biography:** Zhang Ran, Professor of Business School in Renmin University of China. She worked at Guanghua School of Management, Peking University from 2006 to 2019. She is currently a member of the first Accounting Standards Advisory Committee of the Ministry of Finance, and serves as an independent director and chairman of the audit committee of BYD Company Ltd.

**Abstract:** China's domestic stock market, also known as China A shares is the second largest equity market in the world after the US. More importantly, it offers broad and extensive trading liquidity. Currently, the total trading volume in China is larger than the entire MSCI Emerging Markets combined. Compared to most other countries, China's stock market is more heavily dominated by retail investors and retail trading volume. The market is highly speculative and volatile. As a result, standard quantitative stock selection factors perform well in China, but show very different patterns to other markets.

With the largest population in the world, China enjoys the biggest big data in the world, which is very useful in Quantamental Investing. For example, the customer location data based on the location of cell phones are very useful to forecast the earnings and then the future returns for retail firms. The speaker will talk about mainly on how big data be used on Quantamental Investing and specifically, several of her own research.

Key Words: Big Data, Quantamental Investing

### Keynote Speech 2: AI and Knowledge Management and their Advance Strategies for Big Data Technologies



### Prof. Madjid Fathi

Director, Institute for Knowledge Based Systems & Knowledge Management, Research Center for Knowledge Management and Intelligent Systems, University of Siegen, Germany

**Biography:** Madjid Fathi is a professor and Head of KBS & KM (Knowledge Based System & Knowledge Management) institute at the EECS Department at the University of Siegen, Germany.

Accordingly, he obtained Habilitation degree (Post-Doctorate) at the University of Ilmenau, Germany, in 1998. Before he got the Professor at the Department of Electrical Engineering and Computer Science at the University of Siegen, he was visiting scholar at Florida State University and from 2003 at LMM (Lab for Micromechanics- Prof. Garmestani) Georgia Institute of Technology. Since 2004, he is In Siegen. He was Visiting Scholar with Professor Zadeh father of Fuzzy Logic at U.C. Berkeley dept. of EECS joined the BISC (Berkeley Initiative of Soft Computing) from Sep/2012 to Sept/2013. As head of KBS, he has led a large of different academic team of researchers and educators which has, thus far, resulted in over 60 theses.

His research interests are focused on AI, Knowledge Based System (KBS), knowledge management and their applications in medicine and engineering, knowledge transfer, organizational learning, and knowledge discovery from text (KDT).

He is the editor of "Integration of Practice-Oriented Knowledge Technology" (2013) and "Integrated Systems, Design and Technology" (2011) published by Springer, as well as three (text book- the last one has been published in October 2019 with the title: Computer aided Writing by Springer) and five edited books. He, with his students, has published with more than 270 publications including 30 Journal publications, and obtained four paper awards. He got the European Award Cute-prize 2015. He is a senior member of IEEE as well as member of editorial board of five respective journals. He is the founder of Alzheimer Knowledge Platform www.Alwip.de

**Abstract:** AI & KM (Knowledge Management) are not any more a concept and also not a model, which could meet the need of today's requirement. A large leap in science, technology and our sociological perception enabled AI to become a new mega-trend for developing and digitalizing a variety and fusion of areas as economy, ecologies and education. It is becoming a new resource, dynamically integrated with existing technologies to be successful and approachable; the need's is intelligent methodologies based on Big Data analytics. We are aware that technological resources for Big Data handling have to be far more than just a compound intersection of networks of information and isolated methods. For today's digitalization and to advance the digital fields, we have to develop a sustainable intersection with a reusable AI and novel concepts to maintain and manage the enabling knowledge as a core resource. This help to achieve progress in AI solution for intelligent networking of cyber physical devices.

To achieve smart society it should be prepared any kind of Smartness is in dire need of simpler, more powerful and more usable AI approaches building on a smart intersection of multi-dimensional big data analysis and intelligent algorithms to support the mega organization and integration of information and citizens' needs to prove the power of a sustainable perspective for AI.

Key Words: AI and Knowledge Management, strategies, Big Data Technologies

## **Part IV Video Presentation Sessions**

### Video Presentation Guidelines

- **4** The video uploaded should be in the format of **.mp4** and time duration should be 10-20 mins;
- ↓ Visit *Here* to know How to record a video with PowerPoint
- ↓ The video PPT could design as you like with requirements as below:
  - $\checkmark$  The conference logo should be added to each PPT slide
  - $\checkmark$  Title, presenter and affiliation information should be indicated in the first slide
  - $\checkmark$  Each slide should be concise, uncluttered and readable from a distance
  - ✓ Include only key words and phrases for visual reinforcement
- Signed and stamped electronic presentation certificate would be issued via e-mail after presentation

### **Best Video Presentations Selection**

One best video presentation will be selected based on the "**Votes**" received on the website; This award consists of a certificate and free attendance to MMBD2021.

### Selection Criteria

A best presentation will be selected based on the following items:

- ✓ Research Quality
- ✓ Presentation Performance
- ✓ Presentation Language
- ✓ PowerPoint Design

### Selection Procedure

- All video presentations will be updated on the conference website;
- Audience could select best video presentations by clicking "Vote for the Best Presentation" and vote from the same IP would be counted only one time for each video presentation;
- Five video presentations will be selected based on the number of "Votes" till November 2, 2020.

• TPC members of MMBD 2020 (Who will not deliver video presentation) will choose one best video presentation among the five selected video presentations, and results will be demonstrated on the website on **November 9, 2020**.

### **Oral Session of Modern Management based on Big Data Part 1**

Please Click Paper ID to Access the Video Presentation.

Please Click http://www.academicconf.com/teamslink?confname=mmbd2020 to enter the conference meeting room. (Oct. 19, 2020, GMT+8 Time, Beijing)

**Session Chair**: *Prof. Md. Mamun Habib, Independent University, Bangladesh; University of Texas - Arlington (UTA), USA* 

14:00-14:25       MMBD1068       Management Prof. Md. Mamun Habib, Independent University, Bangladesh; University of Texas Arlington (UTA), USA         14:30-14:50       MMBD1040       The Strides of Consumer Neuroscience: Origin, Definition and Mai Techniques Assist.Prof.Luis-Alberto Casado-Aranda, Department of Marketing and Mark Research, University of Granada, Spain         14:55-15:15       MMBD1071       Market Powers in Fuzzy Environments Assoc.Prof.Alireza Arshadi Khamseh, Logistics Management Department(Engli Section), Gelisim University, Turkey         15:20-15:40       MMBD1046       Stairways to Heaven: Implementing Social Media in Organizations Dr. Moria Levy, Information Science, Bar-Ilan University, Israel         15:45-16:00       BREAK         16:00-16:20       MMBD1032         Environment: Proposal for a Intelligence Management Model Mr.Ignacio Fern ández-Villacañas Marcos, Technical University of Madrid, Spain         16:25-16:40       MMBD1034         Factor for Generating Smart Beta and Index Products Prof. Andreas Zagos, INTRACOM GMBH, Germany         16:45-17:00       MMBD1059         Data Driven Dynamic Management towards Corporate Performance Optimization in Uncertain Times Assoc.Prof. Dimitrios Dimitriou, Democritus University of Thrace, Greece Achieving Productive Reliability through Applying Statistice	
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Achieving Productive Reliability through Applying Statistics	
17:05-17:20 MMBD1005 Distribution Functions	17:05-17:20
Dr. Ramin Rostamkhani, Malek Ashtar University of Technology, Iran	
A Theory of Information Overload Applied to Perfectly Efficient	17:25-17:40
17:25-17:40 MMBD1062 Financial Markets	
Dr. Giuseppe Pernagallo, Collegio Carlo Alberto, University of Turin, Italy	
Factors Influencing Farmers' Willingness to Pay for Weather Inde	
Insurance through Fuzzy-Set Qualitative Comparative Analysis: Insigh	17 45 10 00
17:45-18:00 MINIBD1031 from a Pilot in Jiangxi Province, China	1/:45-18:00
Dr. Xue Zhang, School of Economics and Management, East China University Technology, China	

### **Abstracts of Part 1**

# **MMBD1068** Big Data and Supply Chain Management: A Combination of Modern Management

Md. Mamun Habib

Independent University, Bangladesh; University of Texas - Arlington (UTA), USA Corresponding author: Md. Mamun Habib, Email: mamunhabib@gmail.com

Abstract. Advancement in information and communication technology (ICT) has given rise to explosion of data in every field of operations. Working with the enormous volume of data (or Big Data, as it is popularly known as) for extraction of useful information to support decision making is one of the sources of competitive advantage for organizations today. Supply Chain is a significant contributor to Big Data wherein the diversity of information is large. The data accumulated by Supply Chain contains information from the key entities such as manufacturing, logistics, and retail. The use of Big Data Analytics on a collection of such copious data sets can cultivate a proactive decision-making approach for predicting key opportunities and risks in Supply Chain. Big data used in supply chain management helps to create better customer demand planning strategies by collecting, documenting & analyzing data in a real situation. Big data combined a set of data usually referred as large and complex datasets; enables the company to review real-time data flows. Digitized supply chains have the potential to dramatically lower costs, reduce lead time, and increase product availability. Digitization makes the supply chain more effective, agile, and responsive by sharing knowledge and collaborating complex supplier networks. As a result, this research contributes the practitioners to identify the current situation of their business and it will help them to take timely, fast and better decision.

Keywords: Big Data and Supply Chain Management, Modern Management

### **MMBD1040** The Strides of Consumer Neuroscience: Origin, Definition and Main Techniques

Luis-Alberto Casado-Aranda

Department of Marketing and Market Research, University of Granada, Spain Corresponding author: Luis-Alberto Casado-Aranda, Email: lcasado@ugr.es

Abstract. Business and management research has traditionally turned to self-report methods, namely surveys, focus groups and interviews, to evaluate, understand and predict consumer behavior when exposed to advertising. These techniques capture conscious expressions, feelings and verbal-language-based on responses from consumers regarding advertising recall, brand awareness or purchase intentions. While they are commonly preferred by marketers because of their ease of use, accessibility and cost effectiveness, they are nonetheless subject to bias. They are in fact vulnerable to subjectivity and social desirability, may insert delicate questions (e.g. sexual or religion orientation), do not measure deeper emotions (e.g. ambiguity, risk), may not be able to apprehend cognitive and affective processes, and do not facilitate a moment-by-moment collection of data. Deficiencies in measuring consumer behavior in self-report tools have led to the search for more precise techniques coming from psychology and neuroscience to complement traditional market research methods. The combination of techniques from marketing, neuroscience and psychology has

fostered the growth of a new field of marketing called consumer neuroscience, that overcomes most of the limitations of traditional tools. The current speech precisely outlines the origin and definition of this new branch of marketing, as well as its tools, journals and themes that are worth considering in future research. The current speech also facilitates an agenda for future research and therefore constitutes a starting point for business academics and professionals intending to resort to neuroimaging techniques.

**Keywords:** Marketing, Consumer Behavior, Consumer Psychology, Business Strategies, Consumer Decision Making

### **MMBD1071** Pricing Decisions for Complementary Products with Firm's Different Market Powers in Fuzzy Environments

Alireza Arshadi Khamseh<sup>1</sup>, Fariba Soleimani<sup>2</sup>, Bahman Naderi<sup>3</sup> <sup>1</sup>Logistics Management Department, Faculty of Economics, Administrative and Social Sciences, Istanbul Gelisim University, Turkey <sup>2</sup>Industrial Engineering,? <sup>3</sup>University of Windsor, Canada Corresponding Author: Alireza Arshadi Khamseh, Email: akhamseh@gelisim.edu.tr

**Abstract.** This paper analyzes the pricing decisions of complementary products in a fuzzy supply chain with two manufacturers and one common retailer. Four pricing models, including centralized decision model, MS-Bertrand, RS-Bertrand and NG models, with consideration of different market power structures are adopted. Both the manufacturing cost and the customer demand for products are considered as fuzzy variables. Optimal decisions on prices are determined by using game theoretical approach for each model. Finally, a numerical example is solved to illustrate the effectiveness of each model.

Keywords: Pricing decisions, Complementary products, Game Theory, Fuzzy environments

### **MMBD1046** Stairways to Heaven: Implementing Social Media in Organizations

Moria Levy Information Science, Bar-Ilan University, Israel Corresponding Author: Moria Levy, Email: moria@kmrom.com

**Abstract.** This paper is aimed at both researchers and organizations. For researchers, it provides a means for better analyzing the phenomenon of social media implementation in organizations as a knowledge management enabler. For organizations, it suggests a step-by-step architecture for practically implementing social media and benefiting from it in terms of knowledge management. The research is an empirical study. A hypothesis was set; empirical evidence was collected (from 34 organizations). The data was analyzed both quantitatively and qualitatively, thereby forming the basis for the proposed architecture. The findings of the research show that implementing social media in organizations is more than a yes/no question. There are various levels of implementation in organizations: some implementing at all levels, while others implement only tools, functional components, or even only visibility. The research has practical implications; organizations can use

the suggested four levels architecture as a guideline for implementing social media as part of their KM efforts. This paper is original and innovative. Previous studies describe the implementation of social media in terms of yes/no; this research explores the issue as a graded one, where organizations can and do implement social media step-by-step. The paper's value is twofold: It can serve as a foundational study for future research, which can base their analysis on the suggested architecture of four levels of implementation. It also serves as applied research that will help organizations searching for social media implementation KM enablers.

### Keywords: Social Media, Knowledge Management

**MMBD1032** To avoid repeatability issue, this abstract will be available after the full paper is published in the conference proceedings.

**MMBD1034** To avoid repeatability issue, this abstract will be available after the full paper is published in the conference proceedings.

# **MMBD1059** Data Driven Dynamic Management towards Corporate Performance Optimization in Uncertain Times

Maria Sartzetaki, Dimitrios Dimitriou

Democritus University of Thrace, Greece Corresponding Author: Dimitrios Dimitriou, Email: dimitdimitriou@gmail.com

Abstract. The competitive business environment, the introduction of blockchain in real business and the market conditional (eg. Blockchain) and unconditional uncertainties (eg COVID-19 pandemic) are key drivers for developing dynamic risk assessment tools to support from short corporate decision to long time plans. These tools should be flexible in terms of use, accurate in terms of data and metadata outputs and effective in terms of development and maintenance cost. In transport sector the quick and unpredictive changes in business cycles lead to great interest for introducing of a new generation of data-driven, interactive and dynamically adaptive tools support decisions from new capex investments and strategic planning up to short term allocation of resources and opex management. A series of decisions should be connected to data leverage of strategic importance - the data-driven management could mitigate risks and increase awareness, while re-engineering the out-performance production process will be much easier to be implemented. This paper deals with the presentation of the key components for developing a data driven dynamic corporate management to assess uncertainty and unpredicted risks. The business sectors of the analysis focused on transport and supply chain infrastructure operators where the capital-intensive business environment may dramatically affect by out of time decisions. Adopting a System of System (SoS) approach the utility of data driven service in the real business is addressed. By a dedicated literature review the key areas for action are highlighted and the spots for innovation are depicted. The analysis includes the results from a questionnaire survey, where the needs of transport infrastructure operates are evaluated and the key priorities are presented. Key objective is to present the transport market needs for a data driven management system (platform) upon the development of intelligent services to support decisions for operators and large enterprises managing transportation systems and critical transport infrastructure. The research outputs provide results about the real needs for data analytics, dynamic cost-benefit analysis, business trends in supply chain business ecosystem. Conventional wisdom is to

present the key components for an intelligent data-driven risk assessment system for the different group of potential users' in transport sector, which addressing the stakeholder's expectations, shareholder's prospects and management abilities to response. The research outputs will provide essential messages for managers and decision makers towards business intelligence and corporate management performance optimization, especially in sector of transport and supply chain.

**Keywords:** Modern Business Management, Dynamic Big Data, Corporate Management Performance Optimization

### **MMBD1005** Achieving Productive Reliability through Applying Statistical Distribution Functions

Mahdi Karbasian<sup>1</sup>, Ramin Rostamkhani<sup>2</sup>

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Abstract. Purpose -The main aim of this research is to find the proper Statistical Distribution Function, which can cover the failure time of a single machine or a group of machines. To this end, an innovative program is written in an Excel software, capable of assessing at least six Statistical Distribution Functions. This research study intends to show the advantages of applying Statistical Distribution Functions in an integrated model format to create or increase productive reliability machines. Productive reliability is a simultaneous combination of efficiency and effectiveness in reliability. Design/methodology/approach -The method of theoretical research methodology comprises data collection tools, reference books, and articles in addition to exploiting written reports of the Iranian Center for Defence's Standards. The practical research method includes deploying and assessing the proposed model for a selected machine (In this case a CNC machine). Findings -A comprehensive program in an Excel software having the capability of assessing at least six Statistical Distribution Functions was developed to find the most efficient option for covering the failure times of each machine in the shortest time with the highest precision. This is regarded as the most important achievement of the present study. Furthermore, the advantages of applying the developed model are discussed and a large group of which have direct influences on the productivity of equipment reliability. Originality/value – The originality of the research was ascertained by managers and experts working in maintenance issues at the different levels of the Defense Industries Organization (DIO).

Keywords: Statistical Distribution Functions, Productive Reliability

# **MMBD1062** A Theory of Information Overload Applied to Perfectly Efficient Financial Markets

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**Abstract.** In the era of big data investors deal every day with a huge flow of information. Given a model of cognitive heterogeneity populated by economic agents with limited computational capacity, the paper shows how 'too much' information could cause financial markets to depart from the assumption of informational efficiency. The purpose of the paper is to show that as information increases, at some point the efficient market hypothesis ceases to be true. In general, this assumption cannot be maintained if the use of the maximum amount of information is not optimal for investors. Indeed, the fundamental theorem of the paper proves that as information that no one can fully use. The introduction of computer-based processing techniques can restore efficiency; however, also machines are bounded. This means that as the amount of information increases, even in the presence of non-human techniques, at some point it will no longer be possible to process further information. These findings explain why investors very often prefer heuristics to complex strategies.

**Keywords:** Behavioural Finance; Big Data; Information Economics; Informational Efficiency; Information Overload

**MMBD1031** To avoid repeatability issue, this abstract will be available after the full paper is published in the conference proceedings.

### **Oral Session of Modern Management based on Big Data Part 2**

Please Click Paper ID to Access the Video Presentation.

Please Click http://www.academicconf.com/teamslink?confname=mmbd2020 to enter the conference meeting room. (Oct. 20, 2020, GMT+8 Time, Beijing)

Session	Chair:	Prof.	Jung	Wan	Lee,	Anhui	Universit	ty of	Finance	and	Econom	ics,	China
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		Options Valuation in a High-frequency World
8:30-8:50	<b>MMBD1063</b>	Assoc.Prof. Omid M. Ardakani, Department of Economics, Parker College of Business,
		Georgia Southern University, USA
		How to Optimize Virtual Networks over Time: A Fractal Case of Study by
8.55 0.15	MMRD1003	Using Multiplicative DEA Models
0.55-9.15	WIWIDD1005	Prof. Francisco Daladier Marques Júnio, Computer Networks and Computer Networks Lab, IFPB, Brazil
		Big Data Strategies for Government, Society and Policy Making
9:20-9:45	MMBD1037	Prof. Jung Wan Lee, School of International Economics and Trade, Anhui University of Finance and Economics, China
		An Assertive Reasoning Method for Emergency Response Management
9:50-10:15	<b>MMBD1049</b>	Based on Knowledge Elements C4.5 Decision Tree
		Assoc.Prof. Lu Han, Central University of Finance and Economics, China
10:20-10:35		BREAK
		Environmental Awareness and Adoption Intention of Electric Cars in
10.35 10.50	MMRD10/2	Young Adult
10.35-10.50	MINIDD1042	Assist.Prof.Phaninee Naruetharadhol, International College, Khon Kaen University; Global Entrepreneurship Development Center, Khon Kaen University, Thailand
		An Innovative Application of Big Data in Healthcare: Driving Factors,
10.55 11.10	MMRD1033	Operation Mechanism and Development Model
10.33-11.10 <b>MMDD1033</b>		Dr.Liqin Xie, Institute of Medical Information, Chinese Academy of Medical Sciences/Peking Union Medical College, China
		Occupation Cognition Mining of QA Community in China Based on Big
11:15-11:30	<b>MMBD1025</b>	Data Analysis-Examples from Zhihu
		Dr. Huiyun Shen, College of Business Administration, Huaqiao University, China
11 05 11 55		Exploring Blockchain Technology in Supply Chain
11:35-11:55	MMBD1050	Dr.Jay Daniel, Derby Business School, University of Derby, United Kingdom

### **Abstracts of Part 2**

### **MMBD1063** Options Valuation in a High-frequency World

Omid M. Ardakani

Department of Economics, Parker College of Business, Georgia Southern University, USA Corresponding author: Omid M. Ardakani, Email: oardakani@georgiasouthern.edu

**Abstract.** An alternative approach to the Black-Scholes-Merton formulation of option valuation is the entropy pricing theory. Entropy pricing applies information-theoretic measures to derive the true value of options. I elaborate further on the maximum entropy formulation of option pricing using a generalized set of moment constraints. Higher order moments contain more information about the price density and characterize the shape of the underlying distribution. In a Monte Carlo study, I present entropies of heavy-tailed distributions and show that entropic call densities vary with constraints and become closer to each other as the order of moments increases. In an empirical analysis using high-frequency S&P 500 index options, I examine the impact of moment constraints on the accuracy of theoretical values. Simulation and empirical evidence suggest that the entropic pricing framework provides more accurate results for heavy-tailed, high-frequency data when higher order moment constraints are imposed.

**Keywords:** Heavy-Tailed Distributions, High-Frequency Data, Maximum Entropy, Moment Constraints, Option Pricing

# **MMBD1003** How to Optimize Virtual Networks over Time: A Fractal Case of Study by Using Multiplicative DEA Models

Francisco Daladier Marques Júnior

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**Abstract.** The fine-tuning from TCP/IP's transport layer is mandatory to reach out on how to implement the best way to deliver customer services on cloud computing or virtual network infrastructures. For this reason, this speech show as to evaluate the virtual networks using the fractal structure present on TCP protocol. The Internet Engineering Task Force (IETF) documents that are named by request of comments (RFCs) of numbers 2544 and 6815 were employed to mount the experiments using a great set of distinct virtual networks. So, the decision variables are the fractal dimension to show whether a service is delivered of a form smooth or jagged, as well as the TCP bandwidth and the fractal memory linked to Hurst's parameter. The main goal was to choose between diverse virtual network settings assessed by DEA models as decision-making units (DMUs) which is the best TCP's contract to carry the biggest amount of data in a stable manner over time. The classical static and dynamic DEA models were compared against the multiplicative DEA models, where the results show because we must use the multiplicative DEA models despite a set of other multi-criteria decision-making methods.

**Keywords:** Multiplicative Data Envelopment Analysis Models; Fractal Expert System; Virtual Networks; Network Optimization; Stepwise Performance Evaluation

### **MMBD1037** Big Data Strategies for Government, Society and Policy Making

Jung Wan LEE

Anhui University of Finance and Economics, China Corresponding Author: Jung Wan LEE, Email: jwlee119@bu.edu; jungwan.lee@aufe.edu.cn

Abstract. The paper aims to facilitate a discussion around how big data technologies and data from citizens can be used to help public administration, society, and policy making to improve community's lives. This paper discusses opportunities and challenges of big data strategies for government, society, and policy making. This paper employs the presentation of numerous practical examples from different parts of the world, where public service delivery has seen transformation and where initiatives have been taken forward that have revolutionized the way governments at different levels engage with the citizens and how governments and civil society have adopted evidence driven policy making through innovative and efficient use of big data analytics. The examples include the governments of the United States, China, the United Kingdom, and India and different levels of government agencies in the public services of fraud detection, financial market analysis, healthcare and public health, government oversight, education, fighting crime, environmental protection, energy exploration, agriculture, weather forecasting, and ecosystem management. The examples also include smart cities in Korea, China, Japan, India, Canada, Singapore, the United Kingdom, and the European Union. This paper makes some recommendations how big data strategies transform the government and public services to become more citizen centric, responsive, accountable and transparent.

**Keywords:** Big Data, Big Data Strategy, Big Data Analytics, Public Goods, Public Services, Public Policy, Smart City

# **MMBD1049** An Assertive Reasoning Method for Emergency Response Management Based on Knowledge Elements C4.5 Decision Tree

#### Lu Han

Central University of Finance and Economics, China Corresponding Author: Lu Han, Email: hanluivy@126.com

Abstract. There are a large number of small and medium-sized enterprises in Tmall mall. Due to the scale of these enterprises, there is a big deviation in using traditional financial data to analyze credit. Meanwhile, the customer's comment data can reflect the operation status of the store in a timely manner. Therefore, our research hopes to propose a method to evaluate the credit status of these enterprises through the comments of customers. Firstly, we design a semantic tree to integrate the comments, with which we can reduce the dispersion of comments. And this semantic tree is constructed by only entities. Then in the process of optimizing the semantic tree, we optimize the total entropy of the tree, select the tag attributes, control the structure of the semantic tree. Finally, we use the comment data of Tmall Mall for experimental analysis. Through the experiments, we find that the algorithm can effectively integrate the comments and with this algorithm credit scores can be created easily.

Keywords: Emergency Response Management, Knowledge Elements C4.5 Decision Tree

**MMBD1042** To avoid repeatability issue, this abstract will be available after the full paper is published in the conference proceedings.

**MMBD1033** To avoid repeatability issue, this abstract will be available after the full paper is published in the conference proceedings.

**MMBD1025** To avoid repeatability issue, this abstract will be available after the full paper is published in the related journal.

## **Part V Poster Session**

### **Poster Presentation Preparation**

- There is no size constraint for the e-poster, if you have difficult to decide one, then A1 size (594mm×841mm) is recommended.
- Please send the poster at .PDF format. The Poster would be updated on the conference website after pre-review and confirmation.
- **4** The Poster could design as you like with requirements as below:
  - $\diamond$  The conference logo should be clearly shown in the header
  - ♦ Title, presenter, and affiliation information should be well indicated;
- Signed and stamped electronic presentation certificate would be issued via e-mail after the conference.

### **Best Poster Presentations Selection**

One best Poster presentation will be selected based on the "**Votes**" received on the website; This award consists of a certificate and free attendance to MMBD2021.

### Selection Criteria

- ✓ Research Quality
- ✓ Poster Design

### Selection Procedure

- 4 All poster presentations will be updated on the conference website
- Audience could select best poster presentations by clicking "Vote for the Best Presentation", and vote from the same IP would be counted only one time for each poster presentation;
- Three poster presentations will be selected based on the number of "Votes" till November 2, 2020.
- TPC members of MMBD2020 (who will not deliver video presentation) will choose one best poster presentation among the three selected posters, and results will be demonstrated on the website on November 9, 2020.

### **List of Posters**

Please Click Paper ID to Access the Poster Presentation.

If you have any questions to ask the presenters, you can leave your questions at the webpage of related poster listed via http://www.academicconf.com/poster?confname=mmbd2020 The presenters will answer your questions as soon as possible via the same webpages.

MMBD1004	Research on Key Issues and Countermeasures of Internationalization of Chinese Enterprise Standards <i>Ms</i> , <i>Wei Pan, China National Institute of Standardization, China</i>
MMBD1011	Factors Affecting Mobile Banking Loyalty in Thailand Assist. Prof. Phaninee Naruetharadhol, International College, Khon Kaen University; Global Entrepreneurship Development Center, Khon Kaen University, Thailand
MMBD1014	The Effect of Open Innovation Implementation on Small Firms' Propensity for Inbound and Outbound Open Innovation Practices Assist. Prof. Phaninee Naruetharadhol, International College, Khon Kaen University; Global Entrepreneurship Development Center, Khon Kaen University, Thailand
MMBD1019	Barriers and Facilitators of Front Identification in China's Pork Traceability System Dr. Fen Xu, China Agriculture University; Beijing Technology and Business University; Tsinghua University, China
MMBD1021	Development of Entering and Reporting Registration System Platform of the CAU library in COVID-19 Epidemic Period <i>Mr. Hao Yu, China Agricultural University, China</i>
MMBD1030	Review of the Application of Social Media Data in Disaster Research Ms. Jiting Tang, Beijing Normal University, China
MMBD1043	A Design and Study on the Framework of University Academic Atmosphere Governance Based on IT Governance Theory Dr. Zhaohuan, Network and Information Center (Library), Beijing International studies University, Beijing, China
MMBD1045	Study on the Profit Model in the E-commerce Mr. Weibo Huang, Guangdong University of Foreign Studies, China
MMBD1060	A COSMIC-Based Approach for Verifying the Conformity of BPMN, BPEL and Component Models Dr. Wiem Khlif, University of Sfax, Sfax, Tunisia
MMBD1064	Formulation of Total Shortening Distance for Adding Close Relations between One Member and Every Other Member of the Same Level in a Complete Binary Linking Pin Organization Structure Prof. Kiyoshi Sawada, Department of Economic Information, University of Marketing and Distribution Sciences, Japan

### **Abstracts of Posters**

**MMBD1004** To avoid repeatability issue, this abstract will be available after the full paper is published in the conference proceedings.

**MMBD1011** To avoid repeatability issue, this abstract will be available after the full paper is published in the conference proceedings.

**MMBD1014** To avoid repeatability issue, this abstract will be available after the full paper is published in the conference proceedings.

**MMBD1019** To avoid repeatability issue, this abstract will be available after the full paper is published in the conference proceedings.

**MMBD1021** To avoid repeatability issue, this abstract will be available after the full paper is published in the conference proceedings.

**MMBD1030** To avoid repeatability issue, this abstract will be available after the full paper is published in the conference proceedings.

**MMBD1043** To avoid repeatability issue, this abstract will be available after the full paper is published in the conference proceedings.

**MMBD1045** To avoid repeatability issue, this abstract will be available after the full paper is published in the conference proceedings.

# **MMBD1060** A COSMIC-Based Approach for Verifying the Conformity of BPMN, BPEL and Component Models

Wiem Khlif, Han êne Ben-Abdallah, Asma Sellami, Mariem Haoues University of Sfax, Sfax, Tunisia Corresponding Author: Wiem Khlif, E-mail: wiem.khlif@gmail.com

**Abstract.** Besides its application in the software development lifecycle, COSMIC Functional Size Measurement (FSM) is investigated as a means tomeasure the size of business processes (BP). This paper proposes acompre-hensive COSMIC FSM-based framework to verify the conformity of the business process design and run-time models with their aligned information system(IS). It relies on the standard notations BPMN and BPEL to describe the business process and run-time models, respectively, and the component diagram to describe the IS. The paper defines formulas to apply COSMIC on these models and heuristics to verify their conformity. It illustrates the approach through a case study.

**Keywords:** Functional Size Measurement (FSM), COSMIC Component diagram, BPMN, BPEL model (BPEL)

#### **MMBD1064** Formulation of Total Shortening Distance for Adding Close Relations between

### One Member and Every Other Member of the Same Level in a Complete Binary Linking Pin Organization Structure

### Kiyoshi Sawada

Department of Economic Information, University of Marketing and Distribution Sciences, Japan Corresponding Author: Kiyoshi Sawada .E-mail: Kiyoshi\_Sawada@red.umds.ac.jp

Abstract. A linking pin organization is a structure in which relations between members of the same section are added to a pyramid organization where there exist only relations between each superior and his direct subordinates. This study proposes a model of adding relations between one member and every other member of the same level N (N = 1, 2, ..., H) in a complete binary linking pin organization structure where edges are added between every pair of nodes which have the same parent in a complete binary tree of height H (H = 1, 2, ..., N). When the lengths of adding edges are 0.5 while those of edges of complete binary linking pin organization structure are 1, the total shortening distance which is the sum of shortening lengths of shortest paths between every pair of all nodes by adding edges is formulated for the purpose of revealing an optimal additional relation level  $N^*$ .

Keywords: Linking Pin Organization, Complete Binary Tree, Optimization Modeling

## Part VI Call for Papers for Peer Review Journals

### Welcome to submit papers to the related SCI/EI indexed journals listed

### below from MMBD2020's cooperating conference:



FSDM 2020 November 13-16, 2020 Online Conference The 6th International Conference on Fuzzy Systems and Data Mining (FSDM2020) November 13-16, 2020, Online Conference via Microsoft Teams



CMES-Computer Modeling in Engineering & Sciences (IF=0.805) Special Issue: Intelligent Computing for Engineering Applications ISSN: 1526-1492 (Print);ISSN: 1526-1506 (Online) Indexed by: Science Citation Index (Web of Science), Scopus, Engineering Index (Compendex), etc.



International Journal of Fuzzy Systems (IF=4.406) Special Issue:Fuzzy Decision-Making Methods for Sustainable Developments of Industrial Engineering ISSN: 1088-467X (Print) 1571-4128 (Online) Indexed by: Science Citation Index-Expanded (SciSearch®), EI Compendex, EBSCO database, Scopus and others



Journal of Applied Statistics (IF= 1.031) Special Issue: Statistical Approaches for Big Data and Machine Learning ISSN: 0266-4763(Print) ISSN: 1360-0532(Online) Indexed by: Science Citation Index(SCI), Science Citation Index-Expanded (SCI-expanded), Scopus, CNKI Scholar, Baidu Scholar, Google Scholar, EBSCO database and others



International Journal of Information Technology and Web Engineering (IJITWE) Special issue: Big Data Analysis in Intelligent Decision Support Systems ISSN: 1554-1045 EISSN: 1554-1053 Indexed by: Web of Science - Emerging SCI, Compendex (Elsevier Engineering Index), SCOPUS, and others.

Besides, the SSCI/SCI indexed journals featuring Data Engineering, Machine Learning and Algorithms by SAGE are calling for papers as listed below:





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# **Call for Papers** Journals Featuring Data Engineering, Machine Learning,

# BIG DATA a society www.

### Big Data & Society

### Impact Factor:4.577

Indexed In: SSCI, SCOPUS, DOAJ



and Algorithms

SAGE Open (SGO) is a peer-reviewed, "Gold" open access journal from SAGE that publishes original research and review articles in an interactive, open access format. Articles may span the full spectrum of the social and behavioral sciences and the humanities.





Measurement and Control

#### Impact Factor:1.492

Indexed In: SCIE, SCOPUS, DOAJ, Compendex, EBSCO, ProQuest, TEMA Technology & Management, CSA Technology Research Database



Big Data & Society (BDS) is an open access peerreviewed scholarly journal that publishes interdisciplinary work principally in the social sciences, humanities and computing and their intersections with the arts and natural sciences about the implications of Big Data for societies.



International Journal of Advanced Robotic Systems

Impact Factor:1.482

Indexed In: SCIE,SCOPUS, DOAJ,EBSCO,Ei Compendex, ProQuest



Science Progress

Impact Factor:1.906 Indexed In: SCIE, SCOPUS, EBSCO, ProQuest Advances in Mechanical Engineering

Advances in Mechanical Engineering

#### Impact Factor:1.161

Indexed In:SCIE, SCOPUS, Chemical Abstracts Service (CAS), DOAJ,EBSCO,ProQuest, TEMA Technology & Management



Any questions, please contact: China.Authorqueries@sagepub.co.uk

## Part VII Acknowledgements

On behalf of the MMBD2020 Organizing Committee, we would like to take this opportunity to express our sincere gratitude to our participants. Without their support and contributions, we would not be able to hold the conference successfully in this special year. We would also like to express our acknowledgements to the Technical Program Committee members who have given their professional guidance and valuable advice as reviewers.

Special Thanks go to Prof. Dr. Jung Wan Lee from Anhui University of Finance and Economics, Prof. Dr. Md. Mamun Habib from Independent University, Bangladesh; University of Texas - Arlington (UTA), USA. and Dr. Antonio J. Tallón-Ballesteros from University of Huelva (Spain). In these uncertain times, their continuous support and valuable opinions help us to meet the challenges of organizing the conference in this moment and those yet to come.

Below are the lists of the Technical Program Committee members. For those who contribute to the success of the conference organization without listing the name here, we would love to say thanks as well.

### **Technical Program Committee (TPC)**

### **TPC Chair**

# **Prof. Dr. Jung Wan Lee**, School of International Economics and Trade, Anhui University of Finance and Economics (AUFE), China

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