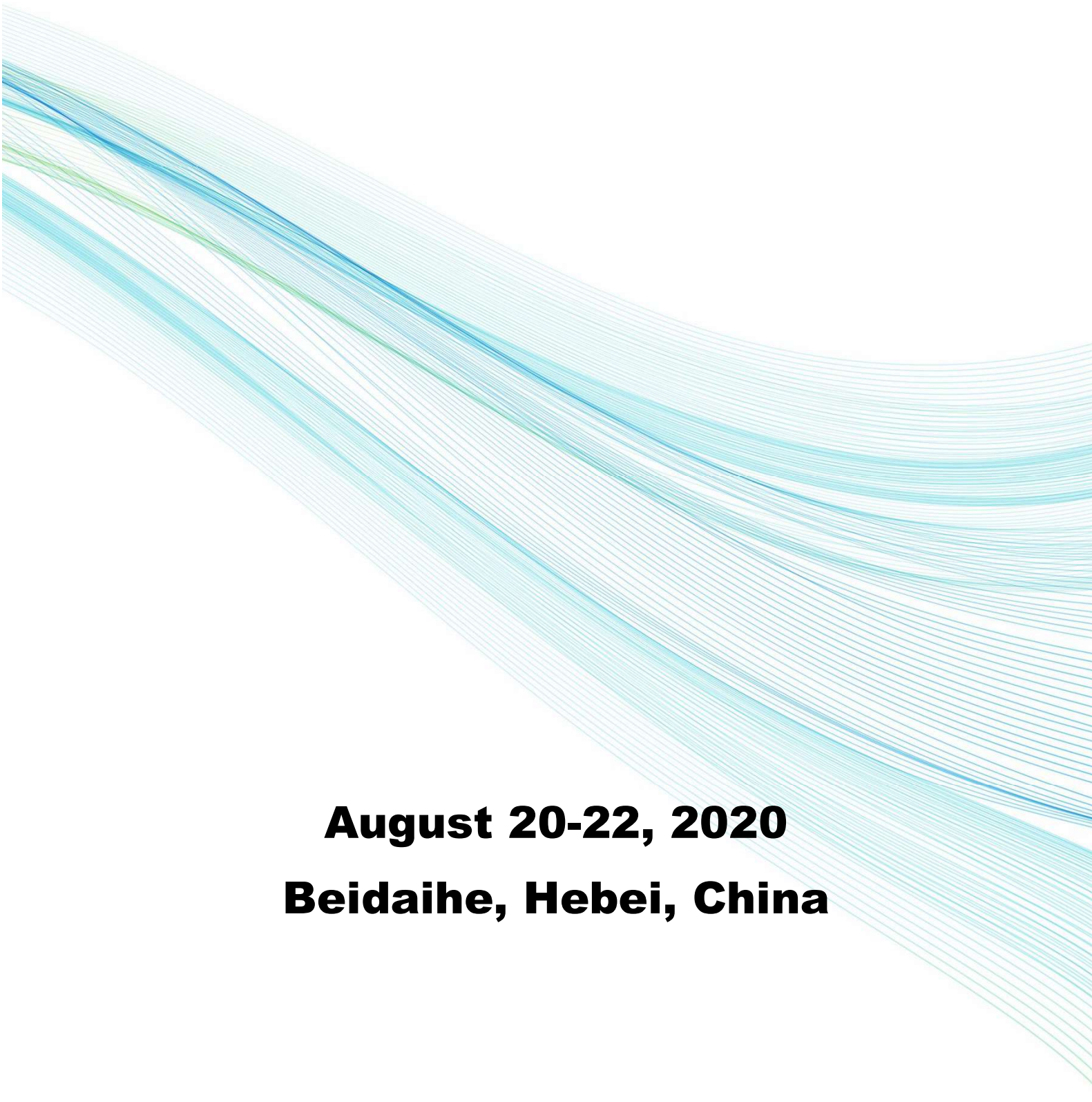
The 5th International Conference on Smart Finance (ICSF 2020)

# Handbook



**August 20-22, 2020**

**Beidaihe, Hebei, China**

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# Welcome to ICSF 2020 in China

The International Conference on Smart Finance (ICSF) aims to create a direct channel for industry leaders to connect and communicate with academic leaders on how to harness big data analytics in New Finance. ICSF 2016 (International Summit of Smart Finance) was held at the City University of Hong Kong's Shenzhen Research Institute and hosted jointly by the Center on Global Internet Finance and the College of Business, City University of Hong Kong. ICSF 2017 was hosted jointly by the Center on Global Internet Finance at the City University of Hong Kong, the Business School at the Sun Yat-sen University. ICSF 2018 was hosted jointly by the Department of Finance at the Southern University of Science and Technology and the Center on Global Internet Finance at the City University of Hong Kong. The ICSF 2019 was jointly hosted by the College of Economics and Management at the Beijing University of Technology, the School of Belt and Road at University of Chinese Academy of Sciences, and the Center on Global Internet Finance at the City University of Hong Kong. The ICSF 2020 will go virtual, jointly hosted by School of Economics and Management at the Yanshan University, School of Information at Renmin University, College of Economics and Management at the Beijing University of Technology, and Center on Global Internet Finance, City University of Hong Kong. It will be held at Yanshan University.

We define Smart Finance as research and development in the intersection of business intelligence (big data analytics and data science) and new finance (P2P lending, crowd funding, supply chain finance, and e-payment systems). The main objective of ICSF is to provide a much-needed platform for in-depth exchange of ideas and solutions among industry leaders, academic leaders, and government officials on how to harness Smart Finance.

ICSF sets its goals on promoting industrial best practices and government regulations in relevant business areas, on facilitating academic researchers to study industrial standards, theoretical advances, and educational frameworks, and on connecting industries and academics to identify and collaborate on unprecedented new opportunities. The conference will include typical conference components such as keynotes speeches and parallel sessions that are either invited or submitted from researchers of universities and industries. Areas of research will include, but is not limited to, big data finance, internet finance, and financial intelligence.

We look forward to meeting you at the conference, and wish you a fruitful and inspiring experience.

Thank you.

Conference Steering Committee

# Notes for Participants

1. Conference Date: August 20-22, 2020 (GMT+8)
2. Online Conference Tool: Tencent meeting or VooV meeting

Important Note:

The time slots assigned in the schedule are only tentative. Presenters are recommended to stay for the whole session in case of any absence.

# Sponsor List

## Host

Yanshan University

## Organizers

School of Economics and Management, Yanshan University

School of Information, Renmin University of China

School of Economics and Management, Beijing University of Technology

Center on Global Internet Finance, City University of Hong Kong

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Weiguo Zhang (South China University of Technology)

# Conference Schedule

| Date | Time | Content | | Chairs | Location |
|---|---|---|---|---|---|
| 20-August | | Registration | | | online |
| 21-August | 8:30-8:45 | **Opening Ceremony** | | Chunling Li | Tencent meeting or VooV meeting ID: 494 040 0299<br><br>AND<br><br>bilibili live: https://live.bilibili.com/9896553 |
| | | 8:30-8:35 | **Welcome Speech** | | |
| | | 8:35-8:40 | **Opening Remarks**<br>**Jiadong Ren,** Vice-President of YSU | | |
| | | 8:40-8:45 | **Speech by Prof. J. Leon Zhao** | | |
| | 8:45-9:15 | **Keynote Speech 1:** Technology-Driven Creative Destruction: How the Covid-19 crisis acts as a catalyst and accelerator for business transformation across industries and economies<br>**Prof. Karl Reiner Lang** | | J. Leon Zhao | |
| | 9:15-9:45 | **Keynote Speech 2:** Blockchain-Enabled Banking Innovations<br>**Prof. Eric Zheng** | | | |
| | 9:45-10:15 | **Keynote Speech 3:** Market Uncertainties and Prediction of Rare Events: With an Application to Financial Market Crashes<br>**Prof. Michael Zhang** | | | |
| | 10:15-10:30 | Break | | | |
| | 10:30-11:00 | **Keynote Speech 4:** FinTech and the Logic of Financial Systems: The Unchanged and Changed<br>**Prof. Wei Zhang** | | Chunling Li | |
| | 11:00-11:30 | **Keynote Speech 5:** It Depends on When You Search!<br>**Prof. Qiang Ye** | | | |
| | 11:30-12:00 | **Keynote Speech 6:** The Framework of CAFÉ Hologram Risk Assessment and Applications in Financial Technology (Fintech)<br>**Prof. George Yuan** | | | |
| | 12:00-14:00 | Lunch | | | |
| | 14:00-16:00 | **Session 1: Blockchain** | | Jian Li | Tencent meeting ID: 495 424 724 |
| | | **Session 2: AI and Finance** | | Wei Xu | Tencent meeting ID: 467 589 860 |
| | 16:00-16:10 | Break | | | |
| | 16:10-17:50 | **Session 3: FinTech** | | Daning Hu | Tencent meeting ID: 441 361 461 |
| | | **Session 4: Innovitive Applications** | | Quan-Lin Li | Tencent meeting ID: 764 183 439 |

| Date | Time | Content | Chairs | Location |
|---|---|---|---|---|
| 22-August | 9:00-10:00 | **Panel Discussion:**<br>**Advanced Issues in FinTech and Applications** | Quan-Lin Li | Tencent meeting<br>ID: 570 523 672 |
| | 10:00-10:10 | Break | | |
| | 10:10-10:30 | **Closing Ceremony** | Chunling Li | |
| | | **Speech by Prof. J. Leon Zhao**<br>**Issuing of Best Paper Certificates** | | |

# Keynote Speakers

## Title: Technology-Driven Creative Destruction: How the Covid-19 crisis acts as a catalyst and accelerator for business transformation across industries and economies

Presenter: Karl Reiner Lang
Professor,
City University of New York

**Abstract:**Since the beginning of 2020 the COVID 19 pandemic has been wreaking havoc on businesses and societies around the world, leading to economic recessions and depressions, sharpening socio-economic inequalities, and incurring devastating human costs in many countries. This talk will offer a perspective based on the concept of Schumpeterian creative destruction and argue that the post-pandemic world will never return to the old normal but rather find a new and much different normal with a radically reconfigured economy where newly efficient organizations largely replace old ones that failed to adapt either because of structural deficiencies or strategic miscalculation. This economic reconfiguration can be best viewed as a cycle of creative destruction that was triggered by the covid-19 crises forcing organizations to adapt and innovate. Looking at the type of businesses that are struggling and those that are resilient and thrive we find that technology is the principle driver for successful business transformation and in many cases are accelerating change processes that had already begun long before the crisis. We will discuss examples from different industries, focusing particularly on financial services, tech, education and highlighting how technology is shaping the creative destruction process. We conclude with some thoughts on open questions and new challenges.

**Biography:**Dr. **Karl Lang** holds a PhD in Management Science from the University of Texas at Austin (1993) and is currently a Professor of Information Systems and the Director of the Phd Program in Business at Baruch College, CUNY. Professor Lang specializes in the areas of IT strategy, algorithmic decision making, cognitive computing, and issues relating to newly arising digital society. His work has been published in leading journals, including the *Journal of Management Information Systems*, *Journal of the Association of Information Systems, International Journal of Electronic Commerce, Computational Economics* and *Annals of Operation Research*, among others. Professor Lang serves on the editorial boards of the journals *Information and Management, Electronic Commerce Research and Applications,* and was an Associate Editor for *Decision Support Systems.*

## Title: Blockchain-Enabled Banking Innovations

Presenter: Eric Zheng
Professor,
University of Texas at Dallas

**Abstract:**It is not too much of stretch to realize that the banking industry is going through a disruption period. Banks globally cut over 75,000 jobs in 2019 alone. Led by AI and Blockchain technologies, all the traditional functional areas of the banking services are being transformed, from depositing, wealth management, financial advising to investing. Professor Eric Zheng will discuss the challenges and opportunities enabled by Blockchain for the banking services, including DCEP, open finance, De-Fi, micropayment, and supply chain finance etc.

**Biography: Eric Zheng** is the Ashbel Smith Professor of Information Systems with a joint appointment in Financeat the Jindal School of Management, University of Texas at Dallas. He received his PhD from the Wharton School of Business, University of Pennsylvania.

His recent research interests focus on Fintech and Blockchain. He currently serves as a senior editor for *Information Systems Research* and is the co-editor for its special issue on Fintech and Blockchain. He co-founded the premier *Informs Workshop on Data Science*.

## Title: Market Uncertainties and Prediction of Rare Events: With an Application to Financial Market Crashes

Presenter: Michael Zhang
Professor,
Chinese University of Hong Kong

**Abstract:**Over the last two decades, big data and machine learning models achieved tremendous success in offering empirical insights in various fields of management science. While such methods are often very powerful in making predictions, they face two main challenges: (1) there is no guarantee that the underlying distribution will remain the same in the future, and (2) such models often fail to make predictions of rare events. This study aims to examine how uncertainties can be measured and demonstrate how the solution of the first issue can contribute to the examination of the second. Our setting is the financial market. Black swan events such as market crashes have significant impacts, but they do not happen very often. Given the rare nature of stock market crashes, machine learning models are not reliable. We discuss how ambiguity can be a measure of market uncertainty to examine financial market deviation from the fundamentals. We propose a measure of ambiguity and examine how it can be used to complement data-driven prediction models. We find that, under certain conditions, when the distribution of observed returns become closer to normal, the market is actually further away from the fundamentals. This new measure works remarkably well in demonstrating financial market deviations over the course of the past 30 years, and was able to offer warning signals to major stock market crashes including the recent one in February and March of 2020.

**Biography:** Professor **Michael Zhang** is a Chair Professor at the Chinese University of Hong Kong. He serves as the Associate Dean of Innovation and Impact at the CUHK Business School and is also affiliated with MIT Initiative on Digital Economy and European Center for Economic Research (ZEW).He has a PhD in Management from MIT Sloan School of Management, an MSc in Management, a BE in Computer Science and a BA in English from Tsinghua University. Before joining the academia, he worked as an analyst for an investment bank, and as an international marketing manager for a high-tech company. Professor Zhang's research interests are on issues related to creation, dissemination and processing of information in business and management contexts. His works study pricing of information goods, online advertising, innovation and incentives, and use of Artificial Intelligence in financial markets. His research has appeared in *American Economic Review, Management Science, Marketing Science, Journal of Marketing, MIS Quarterly, Information Systems Research, Journal of MIS, Decision Support Systems, and Journal of Interactive Marketing*.He has been actively involved in professional services, including serving as a Senior Editor for Information Systems Research, an Associate Editor for Management Science, a Guest Associate Editor for MIS Quarterly.

## Title: FinTech and the Logic of Financial Systems:The Unchanged and Changed

Presenter: Wei Zhang
Professor,
Tianjin University

**Abstract:**Although technology is value-neutral itself, the application of technology, say FinTech, can either create economic value or destroy it, depending on how the technology is deployed in the operations of business. This talk will give a new perspective to view FinTech and its impact, based on the basic logic of financial system composed of financial assets/products, markets, and intermediate institutes. It is shown that FinTech can create more diversified new financial business, and be of great help in increasing the value and efficiency of financial operations, when aligning with the logic. Also, FinTech can serve as microscope to let us have more and detailed look to real world financial phenomena, and, therefore, have more opportunities to explore the new research territory of Finance.

**Biography: Wei Zhang** is a University Chair Professor at College of Management and Economics, Tianjin University, China. His research interests focus on Asset Pricing and Risk Management, Financial Analytics and FinTech, Complex Systems in Finance and Economics. He currently serves as managing editor for *Journal of Management Science and Engineering* and is the co-editor for the special issues on Fintech for several international journals.

## Title: It Depends on When You Search!

Presenter: Qiang Ye
Professor,
Harbin Institute of Technology

**Abstract:**Existing studies propose Internet search activity as a direct and timely measure of investor attention. This study explores search time heterogeneity to capture different types of cognitive tasks behind search. Weekends afford retail investors more time for the type of deliberate and persistent search that is essential in planning trading actions, while work and market fluctuations during weekdays prompt more casual and transient search. Using the daily search volume index (SVI) from Google Trends and Baidu index, this study distinguishes online searches on weekends from weekdays and show that weekend search is more powerful in predicting stock returns. The predictive power of weekend search is stronger in the absence of surges in transient search volume. The findings are consistent with the notion that weekend search is more deliberate and persistent, and thus better captures retail investor attention that leads to trading action.

**Biography:** Prof. **Qiang Ye** is the Dean of School of Economics and Management, Harbin Institute of Technology, Chang Jiang Scholar distinguished Professor, and the winner of the National Science Foundation for Distinguished Young Scholar.He is currently the member of National Supervisory Committee on MBA Education, Discipline Evaluation Group of Academic Degrees Committee of the State Councill, and the Management Science and Engineering Teaching Steering Committee of the Ministry of Education. His main research areas are artificial intelligence and big data business analysis, fintech, online tourism, etc.In recent years, he has published more than 50 academic papers in *ISR*, *POM*, *JMIS*, *TM*, *IJHM* and other top tier journals. He has won the Best Paper Award at the Asia-Pacific Academic Conference on Information Systems (PACIS), the "Wujiapei Award of China's Information Economics" and Elsevier's Highly cited Scholars in China from 2015 to 2019.

**Title: The Framework of CAFÉ Hologram Risk Assessment and Applications in Financial Technology (Fintech)**

Presenter: George Yuan
Professor,
Sun Yat-sen University

**Abstract:**By following the big data thinking in financial technology (Fintech) and combining Gibbs sampling algorithm in artificial intelligence (AI), we first share how we establish a new assessment system called CAFÉ evaluation system based on our four dimensional holograms, which is applied for risk assessment for enterprises and companies in line with China's actual situation. As applications, we will also share:

1.How the main credit risk rating system for more than 4000 domestic enterprises / companies looks like;

2.How we design a new type of equity products based on "value investment" of companies;

3.How combining with the capital structure theory of Modigliani and Miller (MM ) in finance, the credit evaluation system of bonds in capital market is established; plusCombined with the events from the second half of 2019, we share the case analysis and sharing of credit risk based on financial fraud, default and bankruptcy of listed companies and poor financial quality of companies.

**Biography:** Dr. **Yuan** is a distinguished professor in Business School, Sun Yat-sen University, Shanghai Lixin University of Accounting and Finance, and Soochow University (Suzhou, China). He is the CRO and SVIP of BBD Technology Co., Ltd. (BBD). He is the chief editor of the international Journal of Financial Engineering, and a member of the editorial board of several academic journals. He is currently the deputy director of CSIAM’s active group on Financial mathematics, Financial engineering, Actuarial and Insurance.

Professor Yuan has more than 25 years of work and study experience at home and abroad (the United States, Canada, and Australia). At present, the research work has been carried out on the theoretical and practical application of financial technology / financial engineering / financial mathematics, as well as nonlinear functional analysis and related applications. More than 150 academic papers and 2 monographs have been published in SCI and SSCI journals. In financial technology, small and micro enterprises are characterized by unstructured dynamic depiction, dynamic credit rating, brand new portrait, digital asset pricing, The CAFÉ system which is original established based on the basic theoretical research by using new concept called "Consensus games" for consensus economics under the framework of Fintech, especially the establishment of consensus game framework in support of consensus economics, as well as nonlinear analysis and related KKM theory in nonlinear set-valued analysis.

# Parallel Sessions

## Session I: Blockchain

**Time: August 21, 14:00-16:00 (GMT+8)**
**Tencent meeting or VooV meeting**
**ID: 495 424 724**
**Session Chair: Prof. Jian Li**

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|---|---|
| 14:00-14:20 | Pyramid-Type Markov Processes in Blockchain Selfish Mining<br>Quan-Lin Li |
| 14:20-14:40 | Supply chain financing using blockchain: impacts on Auto industry supply chain with asymmetric demand distributions<br>Hai Bo Yu, Tong Tong Li and Jing Feng Jiang |
| 14:40-15:00 | Research on the application of blockchain technology in port supply chain finance<br>Jia Liu, Jianrui Wang and Md Moslah Uddin |
| 15:00-15:20 | A Novel Computational Trust Framework for Blockchain Project Fraud Detection<br>Rui Shi, Xinyu Zhu and J Leon Zhao |
| 15:20-15:40 | FSCM: A Theoretical Mechanism of Fair Inspection and Secure Delivery of Content-Based Digital Products<br>Qi Luo and Jiaqi Yan |
| 15:40-16:00 | Block-chain: a new technological change will lead to innovation in the financial system<br>Ying Su |

# Session II: AI and Finance

**Time: August 21, 14:00-16:00 (GMT+8)**
**Tencent meeting or VooV meeting**
**ID: 467 589 860**
**Session Chair: Prof. Wei Xu**

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|---|---|
| 14:00-14:20 | Enterprise Knowledge Graph for Corporate Fraud Detection<br>Shuo Wang, Wei Du and Wei Xu |
| 14:20-14:40 | Cross-Sectional Dispersion Measures on Machine Learning Approaches to forecast Volatility<br>Ao Yang and Conghua Wen |
| 14:40-15:00 | A Novel Deep Learning Method to Detect Car Insurance Fraud<br>Ho, Derek Yip, Iris Lai and Jason Hui |
| 15:00-15:20 | Do Equity Incentives Promote the Market Value Management of Listed Companies?<br>Xiuqing Zang and Yan Fu |
| 15:20-15:40 | A behavioral analytics framework for bank direct marketing with deep learning models<br>Chang Liu, Wei Xu and Wei Du |
| 15:40-16:00 | A Regression Scheme in R Programming for Time Series Forecasting of Gold, Crude Oil and Exchange Rates<br>Shehar Bano |

## Session III: FinTech

**Time: August 21, 16:10-17:50 (GMT+8)**
**Tencent meeting or VooV meeting**
**ID: 441 361 461**
**Session Chair: Prof. Daning Hu**

| | |
|---|---|
| 16:10-16:30 | Impress You for Your Support: The Role of Images in the Success of Crowdfunding Projects<br>Hui Yuan and Wei Xu |
| 16:30-16:50 | Taxonomyof Adoption Considerationsand Digital Currencies<br>Huaiqing Wang, Shaonan Li and Jiaqi Yan |
| 16:50-17:10 | Social Media Signals in The Cryptocurrencies Market<br>Manuele Reani |
| 17:10-17:30 | A SMEs' real-time credit rating model with an online semi-supervised learning algorithm<br>Qi Lu and Wei Xu |
| 17:30-17:50 | SMEs Accounts Receivable Pledge Financing Gamesin the Supply Chain<br>Haiju Hu, Yakun Li and Mao Tian |

# Session IV: Innovative Applications

**Time: August 21, 16:10-17:50 (GMT+8)**
**Tencent meeting or VooV meeting**
**ID: 764 183 439**
**Session Chair: Prof. Quan-Lin Li**

| | |
|---|---|
| 16:10-16:30 | A Pricing Resource Allocation for Edge Computing in the Lack of Cloud Center Scenario<br>Shiyong Li and Huan Liu |
| 16:30-16:50 | Research on the Application of Online Auction Trust Model in Logistics Outsourcing<br>Weixin Li, Fuqiang Lu and Suxin Wang |
| 16:50-17:10 | Can Community Interaction Enhance the Affective Commitment of Customers of Travel Agencies?—Discussion on Mechanism of Action, Group Comparison and New Mode of Tourism<br>Gao Shurui and Meng Weidong |
| 17:10-17:30 | Impact of Service Trade Restrictions on China's Service Import and Export<br>Yuchan Zhang |
| 17:30-17:50 | The Outbreak Mechanism and Control of False Information in Public Crises<br>Xiaoxia Zhu, Xueping Gong, Quanlin Li and Jiaxin Song |

# Panel Discussion

## Advanced Issues in FinTech and Applications

**Time: August 22, 9:00-10:00 (GMT+8)**
**Tencent meeting or VooV meeting**
**ID: 570 523 672**
**Chair: Prof. Quan-Lin Li**

| Speakers | Affilitation |
|---|---|
| Dr. Zhijie Li | Chair, BIMG Institute<br>Dean, FinTech Institute of Renmin University of China |
| Ms. Boshu Zhang | Data Engineer, Jingdong Digits |
| Mr. Yaoci Han | Product Manager, AI Risk Management Center, China Everbright Bank |
| Dr. Qi Zhang | Data Engineer, China Merchants Bank (Shenzhen, China) |
| Prof. Jian Li | Beijing University of Technology |

The 5th International Conference on Smart Finance (ICSF 2020)

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