

# CONFERENCE PFOGRAM

SINGAPORE Virtual Conference

# 2022

Oct. 14-16

## ICEBI

2022 6th International Conference on  
E-Business and Internet

## ICEBB

2022 5th International Conference on  
E-Business and Business Engineering

Supported by



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# WELCOME ADDRESS

Welcome all of you to join the 2022 6th International Conference on E-Business and Internet (ICEBI 2022), and 2022 5th International Conference on E-Business and Business Engineering (ICEBB 2022), which was planned to be held in Singapore during October 14-16, 2022. However, under the impact of COVID-19, the committee made a hard decision to conduct a fully virtual conference. This conference aims to provide a platform for technical and scientific professionals from academia, research and industries in the fields of the vast areas of E-Business in Software Engineering, E-Business in Big Data and Internet of Things (IoT) to exchange knowledge and distribute the emerging state-of-the-art technologies.

We wish to express our sincere appreciation to all the individuals who have contributed to the conference. Special thanks are extended to our colleagues in program committee for their thorough review of all the submissions, which is vital to the success of the conference, and also to the members in the organizing committee and the volunteers who had dedicated their time and efforts in planning, promoting, organizing and helping the conference.

This year we are honored to welcome three distinguished keynote speakers: Prof. Ljiljana Trajkovic (Simon Fraser University, Canada); Prof. Shakil Akhtar (Clayton State University, USA), Prof. Lee Pui Mun (Singapore University of Social Sciences, Singapore), and five Invited speakers.

As the technical support partner of ICEBI&ICEBB 2022, the Singapore University of Social Sciences (SUSS) is recognized as one of the leading universities in Singapore. SUSS is a university with a rich heritage in inspiring lifelong education, and transforming society through applied social sciences. We develop students and alumni to be work-ready and work-adaptive, aspiring to reach their full potential, through our 3H's education philosophy – 'Head' for professional competency with applied knowledge, 'Heart' for social awareness to meet the needs of the society, and 'Habit' for passion towards lifelong learning.

Wish all conference participants a good experience in the two-day series of conference sessions.

Enjoy the conference ICEBI&ICEBB 2022!

ICEBI&ICEBB 2022 Conference Committee

# GUIDELINES

## Before the Conference

### Time Zone

Singapore Standard Time (UTC +8)  
Please set up your laptop time in advance.

ONLINE



### Platform: ZOOM

Download Links:

- ◆ <https://zoom.us/download>
- ◆ <https://zoom.com.cn/download> (for Chinese authors)

### Equipment Needed

- ◆ A computer with internet connection and camera
- ◆ Headphone/earphone

### Environment Needed

- ◆ A quiet place
- ◆ Stable internet connection
- ◆ Proper lighting and background

### Test Your Presentation: Date: October 14, 2022

Prior to the formal meeting, presenters should join the test room to ensure everything is on the right track.

## During the Conference

### Naming

Name yourself with your paper ID + Name  
Example: IB2000+Mary (If you don't have paper, please use your real name to enter the conference)

### Voice Control Rules

- ◆ The host will mute all participants while entering the meeting.
- ◆ The host will unmute the speakers' microphone when it is turn for his or her presentation.
- ◆ Q&A goes after each speaker; the participant can raise hand for questions, and the host will unmute the questioner.
- ◆ After Q&A, the host will mute all participants and welcome next speaker.

### Oral Presentation

- ◆ Timing: a maximum of **15 minutes** in total, including 3 minutes for Q&A. Please make sure your presentation is well timed.
- ◆ It is suggested that the **Presenter** email a copy of his/her video presentation to the conference email box as a backup in case any technical problem occurs.

### Conference Recording

The whole conference will be recorded. We appreciate you proper behavior and appearance.

# CONFERENCE AGENDA

October 14, 2022 | Friday

## Zoom Testing

TIME	EVENT	ZOOM INFO
10:00-12:00	Keynote Speakers & Conference Committees	<b>Room ID:</b> 812 2188 6324 <b>Passwords:</b> Singapore <b>Link:</b> <a href="https://zoom.us/j/81221886324">https://zoom.us/j/81221886324</a>
	Invited Speakers & Session Chairs	
14:00-17:00	Technical Session Presenters (Session 1 & Session 2)	
	Technical Session Presenters (Session 3 & Poster Session)	

## October 15, 2022 | Saturday

<b>Zoom Info</b>	<b>Room ID:</b> 812 2188 6324 <b>Passwords:</b> Singapore <b>Link:</b> <a href="https://zoom.us/j/81221886324">https://zoom.us/j/81221886324</a>
<b>TIME</b>	<b>EVENT</b>
<b>Opening Ceremony</b>	
09:30-09:35	<b>Opening Remarks</b> <b>Prof. Lee Pui Mun</b> , Singapore University of Social Sciences, Singapore
<b>Keynote Speeches</b>	
09:35-10:15	<b>Keynote Speech I</b> <b>Prof. Shakil Akhtar</b> , Clayton State University, USA Title: Internet of Things Medical Imaging Technology for Healthcare Applications
10:15-10:50	Group Photo & Break
10:50-11:20	<b>Invited Speech I</b> <b>Assoc. Prof. Alton Chua Yeow Kuan</b> , Nanyang Technological University, Singapore Title: The Sharing Economy: Research Ideas for e-Business Scholars
11:20-12:00	<b>Keynote Speech II</b> <b>Prof. Lee Pui Mun</b> , Singapore University of Social Sciences, Singapore Title: A Framework for Conceptualizing Digitalization/Automation in an Organization
12:00-13:20	Lunch Break
<b>Invited Speeches</b>	
13:20-14:00	<b>Keynote Speech III</b> <b>Prof. Ljiljana Trajkovic</b> , Simon Fraser University, Canada (IEEE Life Fellow) Title: Machine Learning for Detecting Internet Traffic Anomalies
14:00-14:30	<b>Invited Speech II</b> <b>Assoc. Prof. Mitsunori Hirogaki</b> , Kyushu University, Japan Title: Factors Affecting Customer Buying Behavior and Store Loyalty during COVID-19 in Japan
14:30-15:00	<b>Invited Speech III</b> <b>Assoc. Prof. Bambang Leo Handoko</b> , Bina Nusantara University, Indonesia Title: Analysis of Impact of Competency, Professionalism, and Audit Deadline on Remote Audit Effectiveness
15:00-15:30	<b>Invited Speech IV</b> <b>Prof. Petr Hajek</b> , University of Pardubice, Czech Republic Title: The Predictive Power of Investor Sentiment in Bitcoin Market
15:30-16:00	<b>Invited Speech V</b> <b>Assoc. Prof. Lee Chei Sian</b> , Nanyang Technological University, Singapore Title: A Technology-User-Environment Perspective to understand the implementation of Online Learning Platforms in Asia
16:00-16:15	Break
<b>Technical Session</b>	

16:15-19:00	<b>Session 1—Business Informatization, Digital Economy and E-Society</b> <b>Session Chair: Assoc. Prof. Mitsunori Hirogaki, Kyushu University, Japan</b>  <b>Room ID: 812 2188 6324 Passwords: Singapore Link: <a href="https://zoom.us/j/81221886324">https://zoom.us/j/81221886324</a></b>  IB2011 IB2041 IB2018 IB2042 IB2052 IB3018 IB2006 IB3008 IB2039 <b>IB2032</b> IB2050
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## October 16, 2022 | Sunday

<b>Zoom Info</b>	<b>Room ID: 812 2188 6324 Passwords: singapore</b> <b>Link: <a href="https://zoom.us/j/81221886324">https://zoom.us/j/81221886324</a></b>
<b>TIME</b>	<b>EVENT</b>
<b>Technical Sessions</b>	
09:30-12:30	<b>Session 2—E-Commerce and Network Marketing</b> <b>Session Chair: TBA</b>  <b>Room ID: 812 2188 6324 Passwords: Singapore Link: <a href="https://zoom.us/j/81221886324">https://zoom.us/j/81221886324</a></b>  IB3009 IB2105 IB2003 IB2004 IB2017 IB2116 IB2028 IB2049 <b>IB2030</b> IB2025 <b>IB2044</b> <b>IB2022</b>
12:30-13:30	Lunch Break
13:30-16:30	<b>Session 3—Data Analysis in Business and Information Technology Application</b> <b>Session Chair: Prof. Rossazana Ab Rahim, Universiti Malaysia Sarawak (UNIMAS), Malaysia</b> <b>Session Co-Chair: Assoc. Prof. Bambang Leo Handoko, Bina Nusantara University, Indonesia</b>  <b>Room ID: 812 2188 6324 Passwords: Singapore Link: <a href="https://zoom.us/j/81221886324">https://zoom.us/j/81221886324</a></b>  IB3011 IB3015 IB2106 IB2107 IB2036 IB2047 IB2015 <b>IB2029</b> <b>IB2031</b> IB2040 <b>IB2007</b> IB2012
16:30-16:45	Break
16:45-20:00	<b>Poster Session—Econometrics and Economic Mathematics</b>  <b>Room ID: 812 2188 6324 Passwords: Singapore Link: <a href="https://zoom.us/j/81221886324">https://zoom.us/j/81221886324</a></b>  IB2201 IB2202 IB2203 IB2204 IB2205 IB2206 IB2207 IB2208 IB2209 IB2210 IB2211 IB2212 IB2213



# CONFERENCE COMMITTEE

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Zhou Zihan, Singapore University of Social Sciences, Singapore

Huichuan Dai, Guangdong University of Science and Technology, China

Joanne Wing Yee Ho, Singapore University of Social Sciences, Singapore

# KEYNOTE SPEECH I



## Prof. Shakil Akhtar Clayton State University, USA

09:35-10:15, Oct. 15, Saturday | Room ID: 812 2188 6324 Passwords: Singapore

Dr. Shakil Akhtar is a Professor of IT and Computer Science at Clayton State University since 2007. He was the IT Department head from July 2007 to December 2008. He was a Professor in the College of Information Technology at UAE University from 2002 to 2007. His main research interests are reliability/performance modeling of computer and communications systems, QoS and security issues of fifth generation (and beyond) mobile systems, wireless LAN standards and CS/IT education. He was involved in creating 3G and 4G mobile systems simulation performance models while working for Lucent Technologies during 2000 to 2002. His other prior work experience includes Computer Science/Engineering Departments at Central Michigan University, University of Toledo, and King Fahad University of Petroleum and Minerals, Dhahran, Saudi Arabia. He has a wide teaching experience that includes undergraduate and graduate courses in Computer Networks, Reliability, Performance Modeling, Simulation, Programming (Java, Visual Basic and C++), Computer Architecture and Digital System Design. His research has been supported by the universities and government funding agencies. He has received several individual and joint research grants from Clayton State University, UAE University, Central Michigan University. At the national level, he received NSF research grants while working for Central Michigan University. His published research consists of over 75 papers in international journals and proceedings of international conferences, including papers in IEEE Transactions on Reliability, Computer Communications, WSEAS Transactions on Mathematics, ASEE Annual Conference & Exhibitions, Spring and Summer Simulation Multiconferences, SIGCSE Technical Symposiums on Computer Science Education, etc. He is Editor-In-Chief of ANSI Information Technology Journal and member/reviewer of various international journal/conference advisory boards/technical committee, such as IEEE Transactions on Learning Technologies, Journal of Emerging Trends in Computer and Information Sciences, ASEE Conferences, Scienceone International Conferences on Information Technology, etc. He is also an ABET program evaluator for CS programs since 2010, and has been involved in evaluating more than ten different CS programs nationally and internationally.

### Title: Internet of Things Medical Imaging Technology for Healthcare Applications

**Abstract**—This keynote speech addresses Internet of Thing (IoT) technology usage in healthcare applications. Using IoT in healthcare enhances the quality of care and minimizes the healthcare expenses with automation and resource optimization provided by it. The IoT in medical imaging enables identification followed by corrective measures to be taken in the real time in case of medical emergencies due to serious conditions involving heart, lung, and kidney emergencies with symptoms of high blood pressure, abnormal pulse rate and fluctuations in blood sugar levels. In addition, visual diagnosis of images helps in early detection of serious diseases such as skin cancer etc. An extra advantage of IoT devices is that they are controlled, monitored, and accessed over the web. An IoT ecosystem consists of web-enabled smart devices that use embedded processors, sensors, and communication hardware to collect, send and act on data they acquire from their environments. IoT devices share the sensor data they collect by connecting to an IoT gateway or other edge device where data is either sent to the cloud to be analyzed or may be analyzed locally...

(To get the full version of this abstract, please visit: <http://www.icebi.org/speaker.html>)

# INVITED SPEECH I



## Assoc. Prof. Alton Chua Yeow Kuan Nanyang Technological University, Singapore

10:50-11:20, Oct. 15, Saturday | Room ID: 812 2188 6324 Passwords: Singapore

Dr Chua's research interests lie mainly in information and knowledge management, with a particular focus on user-generated content. The themes of his research include community question-answering system, online reviews and rumors in social media. For example, he studied the quality of answers submitted to Yahoo!Answers and whether prompt answers were necessarily of good quality. He also investigated the way questions ought to be phrased to maximize their chances of attracting good answers. On online reviews, he has identified a number of factors that make a given review helpful to other users. Another related line of inquiry is the distinctions between authentic reviews and fake reviews. Given the prevalence of online rumors in recent times, Dr Chua's efforts have been trained on understanding the virality of rumors, and how the ill effects of rumors can be curbed through the use of counter-rumors.

### Title: The Sharing Economy: Research Ideas for e-Business Scholars

**Abstract**—As an innovative economic and cultural force, the sharing economy is underpinned by three defining characteristics, namely, digital platforms being a key driver, peer-to-peer operations where users can be both service providers and consumers, and the underlying economic logic being one of access rather than ownership. Drawn from a corpus of research articles on sharing economy published in the last decade, this talk identifies a number of novel research directions where e-Business scholars could pursue. Additionally, opportunities for collaboration with like-minded scholars are also highlighted.

# KEYNOTE SPEECH II



## Prof. Lee Pui Mun Singapore University of Social Sciences, Singapore

11:20-12:00, Oct.15, Saturday | Room ID: 812 2188 6324 Passwords: Singapore

Lee Pui Mun is a Professor in the School of Business, Singapore University of Social Sciences [SUSS]. He teaches management, strategy and operations. He also served as the Vice Dean and then the Dean of the School of Business, SUSS between 2010 to 2018. He has authored more than 60 articles and has done consulting work for many organisations in the areas of performance management, quality management, and operations management. He serves as an Assessor for the Singapore Quality Award and conducted research on business excellence. He was a member for the Singapore Quality and Safety Standards Committee and serves as a member of Editorial Board, Asia Pacific Journal of Innovation and Entrepreneurship. He is a senior member of American Society for Quality and is a member for the Academy of Management. He has been a reviewer for many different journals and also an examiner for many different universities' postgraduate theses.

### Title: A Framework for Conceptualizing Digitalization/Automation in an Organization

**Abstract**—The digital economy is fast becoming the dominant locomotive driving economies in many countries. Within businesses and industry, the 4th industrial revolution (Industry 4.0) is changing the way businesses operate and produce goods and services. Digital technologies such as Artificial Intelligence, Data Analytics, Visual Recognition, virtual/augmented reality, metaverse environment, Internet of Things, etc. are becoming relevant tools and techniques to support businesses in successfully adapting themselves to a digital economy. Businesses find themselves needing to embark on strategic digital transformations to meet the needs of the digital economy and Industry 4.0 operating environment.

Most businesses today know that they need to adapt and adopt digital technologies. The important consideration is where and how does a business plan and implement its digital transformation strategically. Many real-life examples have shown digitalization of customer activities and automation of manufacturing processes. Besides these two areas in business, where else could digital transformation be implemented that will enhance productivity and competitiveness of the business?

This discussion will focus on how businesses should consider strategic digital transformation and the use of a framework for conceptualizing digitalization/automation in an organization.

# KEYNOTE SPEECH III



## Prof. Ljiljana Trajkovic Simon Fraser University, Canada (IEEE Life Fellow)

13:20-14:00, Oct. 15, Saturday | Room ID: 812 2188 6324 Passwords: Singapore

Ljiljana Trajkovic received the Dipl. Ing. degree from University of Pristina, Yugoslavia, the M.Sc. degrees in electrical engineering and computer engineering from Syracuse University, Syracuse, NY, and the Ph.D. degree in electrical engineering from University of California at Los Angeles. She is currently a professor in the School of Engineering Science, Simon Fraser University, Burnaby, British Columbia, Canada. Her research interests include communication networks and dynamical systems. She served as IEEE Division X Delegate/Director and President of the IEEE Systems, Man, and Cybernetics Society and the IEEE Circuits and Systems Society. Dr. Trajkovic serves as Editor-in-Chief of the IEEE Transactions on Human-Machine Systems and Associate Editor-in-Chief of the IEEE Open Journal of Systems Engineering. She is a Distinguished Lecturer of the IEEE Circuits and System Society, a Distinguished Lecturer of the IEEE Systems, Man, and Cybernetics Society, and a Fellow of the IEEE.

### Title: Machine Learning for Detecting Internet Traffic Anomalies

**Abstract**—Border Gateway Protocol (BGP) enables the Internet data routing. BGP anomalies may affect the Internet connectivity and cause routing disconnections, route flaps, and oscillations. Hence, detection of anomalous BGP routing dynamics is a topic of great interest in cybersecurity. Various anomaly and intrusion detection approaches based on machine learning have been employed to analyze BGP update messages collected from RIPE and Route Views collection sites. Survey of supervised and semi-supervised machine learning algorithms for detecting BGP anomalies and intrusions is presented. Deep learning, broad learning, and gradient boosting decision tree algorithms are evaluated by creating models using collected datasets that contain Internet worms, power outages, and ransomware events.

# INVITED SPEECH II



## Assoc. Prof. Mitsunori Hirogaki Kyushu University, Japan

14:00-14:30, Oct. 15, Saturday | Room ID: 812 2188 6324 Passwords: Singapore

Dr. Hirogaki is currently an Associate Professor of Marketing Strategy at Kyushu University, Graduate School of Economics, Department of Business and Technology Management (QBS Business School), where he teaches Marketing Strategy and International Marketing. Dr. Hirogaki's current research focuses on Cross-Cultural Consumer Behavior in international marketing and marketing strategies in mature, developed societies. He is a member of Japanese Economic Association, Japan Society of Marketing and Distribution, and Japan Association for Consumer Studies.

**Title: Factors Affecting Customer Buying Behavior and Store Loyalty during COVID-19 in Japan**

**Abstract**—The extreme shift in consumer attitudes brought about by the pandemic is still a major challenge for marketing in retail stores. This presentation will present a series of empirical study results of purchasing behavior in retail stores during "the state of emergency" period. Retailers implemented a series of safety measures in line with government safety protocols and recommendations, but the severity of these measures varied from retailer to retailer. In addition, consumer perceptions to the extent in which store safety measures were implemented by retailers varied. How did these differences in the degree of stringency of retailers' safety measures and consumers' perceptions affect their loyalty to the stores? I will also discuss the impact of Japanese cultural characteristics (especially collectivistic culture) on these results.

# INVITED SPEECH III



## Assoc. Prof. Bambang Leo Handoko Bina Nusantara University, Indonesia

14:30-15:00, Oct. 15, Saturday | Room ID: 812 2188 6324 Passwords: Singapore

Associate Professor Bambang Leo Handoko, academics and practitioners in the field of Auditing. Experience as auditor in public accounting firm, internal auditor for corporations and auditor for securing vital objects of the National Police Headquarters. He is an expert in financial auditing, forensic accounting, information technology auditing and also e-business. He has had many international publications in reputable journals and proceedings with many citation and acknowledgement from international researchers. He had won a lot of research grant from institution and government. Currently work as Subject Content Coordinator Auditing in Accounting Department, Faculty of Economic and Communication, Bina Nusantara University of Indonesia. He also technical committee in many reputable journal publisher and earn Scopus hi Index.

**Title: Analysis of Impact of Competency, Professionalism, and Audit Deadline on Remote Audit Effectiveness**

**Abstract**—Auditors must begin to develop their skills to face industry 4.0. The spread of Covid-19 has further encouraged auditors to conduct remote audits and provides an opportunity to rethink the way audits are conducted. In this study, the researcher wanted to find out how the influence of competence, professionalism, and audit deadlines on the effectiveness of remote audits. This research is quantitative, with data processing using primary data obtained from distributing questionnaires to auditors who work at Public Accounting Firms in Jakarta. Statistical analysis using multiple linear regression, before conducting a feasibility test through validity, reliability and classical assumption tests. The results showed that the variables of competence, professionalism, and audit time limit had a significant effect on the effectiveness of remote auditing.



# INVITED SPEECH IV



## Prof. Petr Hajek University of Pardubice, Czech Republic

15:00-15:30, Oct. 15, Saturday | Room ID: 812 2188 6324 Passwords: Singapore

Petr Hajek is currently a Professor with the Science and Research Centre, Faculty of Economics and Administration, University of Pardubice, Czech Republic. He was also a visiting professor of the University of Czestochowa. He is the author or coauthor of five books and more than 70 articles in leading journals such as the Information Sciences, Decision Support Systems and Knowledge-Based Systems. His current research interests include business decision making, soft computing, text mining and knowledge-based systems. He has served on many international program committees and he is also a member of the editorial board of several international leading journals. He was a recipient of the Rector Award for Scientific Excellence in 2018 and 2019, respectively, and six Best Paper Awards at international scientific conferences.

### Title: The Predictive Power of Investor Sentiment in Bitcoin Market

**Abstract**—Since Bitcoin is not backed by the government, its value is not determined by economic fundamentals and is rather determined by market supply and demand with quite considerable volatility. Confidence among Bitcoin users is thus likely determined by their attitudes and sentiment regarding Bitcoin. Indeed, recent studies of the determinants of Bitcoin price increasingly highlight the importance of investor sentiment. The talk will compare different approaches used to estimate investor sentiment, including market-based measures, direct survey-based measures, Google Trends, and text-based sentiment. Particular attention will be given to news-based sentiment that have shown great potential in the prediction of Bitcoin price. I will also present how integrating investor sentiment into multivariate prediction models can improve the performance of Bitcoin price prediction models.

# INVITED SPEECH V



## Assoc. Prof. Lee Chei Sian Nanyang Technological University, Singapore

15:30-16:00, Oct. 15, Saturday | Room ID: 812 2188 6324 Passwords: Singapore

Dr Lee Chei Sian Lee is currently an associate professor at the Wee Kim Wee School of Communication and Information at the Nanyang Technological University in Singapore where she is also the Associate Chair (Faculty). She obtained her PhD in Management Information Systems from the University of Illinois at Chicago. She is actively involved in research on issues related to the use of social media and information and communication technologies (ICT) that supports work, learning and social interactions. Her work has been widely published in international journals including the Journal of Educational Computing Research, the Journal of the Association for Information Science and Technology, Computers and Education, Computers in Human Behavior and New Media and Society. She has been involved in several funded projects in varying capacities as principal investigator, co-investigator and collaborator. She is currently on the Editorial Advisory Board for Computers and Education and Online Information Review.

**Title: A Technology–User–Environment Perspective to understand the implementation of Online Learning Platforms in Asia**

**Abstract**—Online learning platforms (OLP) aim to bridge the digital divide and promote educational equity globally. Despite its potential, the adoption rate of these platforms remains relatively low, and research on drivers and barriers influencing the adoption of such platforms in Asia is very limited. To fill this research gap, this research extends current research on innovation and technology adoption to propose a conceptual framework, Technology–User–Environment (TUE), to identify drivers and barriers to adopting OLP in Asia. To develop the TUE framework, we identified and conceptualized the factors from three dimensions (i.e., technology, user and social environment). This presentation discussed the findings from 2 studies from data collected via a large-scale survey and focus group discussions. Notably, the TUE framework provides a comprehensive understanding of the drivers and barriers by incorporating the perspectives of both adopters and non-adopters. The practical and theoretical implications of the research will be discussed.

# TECHNICAL SESSION 1

16:15-19:00	<b>Session 1—E Business Informatization, Digital Economy and E-Society</b> <b>Room ID:</b> 812 2188 6324 <b>Passwords:</b> Singapore <b>Link:</b> <a href="https://zoom.us/j/81221886324">https://zoom.us/j/81221886324</a>
	<b>Session Chair—Assoc. Prof. Mitsunori Hirogaki</b> <b>Kyushu University, Japan</b>
<b>IB2011</b> <b>16:15-16:30</b>	<b>Impact of Remote Audit, Computer Literacy, and Audit Software Skill to Audit Quality during Pandemic of COVID-19</b> <b>Presenter:</b> Priscillia Freany Natalia Poluan, Bina Nusantara University, Indonesia <b>Abstract—</b> In order to face industrial revolution 4.0 auditors must start developing their skills. In the past, auditors have used remote audit only to reach remote places. However, currently Covid-19 comes and encourages even more the use of technology and provides an opportunity to rethink the way audits are conducted. In this study, researchers wanted to know how remote audit, computer literacy and audit software skill has affected audit quality. This research is quantitative in nature, by processing data using primary data obtained from distributing questionnaires to auditors who work at public accounting firms in Jabodetabek. Statistical analysis used multiple linear regression, previously carried out a feasibility test through validity, reliability and classical assumption tests. The results showed that the variables of remote audit, computer literacy and audit software skill had a significant effect on the audit quality.
<b>IB2041</b> <b>16:30-16:45</b>	<b>Factors that Affect the Adoption of Digital Bank in Indonesia</b> <b>Presenter:</b> Kenneth Audric Nurjadi, Bina Nusantara University, Indonesia <b>Abstract—</b> The purpose of this paper is to examine a model that explains the factors that influence Indonesian customers to adopt digital banks. Digital bank is defined as a conventional bank that transforms digitally using IoTs, Big Data, and AI in industrial revolution 4.0 era and focuses on developing its services to help customers carry out their banking activity The model proposed was based on the unified theory of acceptance and use of technology 2 (UTAUT2) model. Structural equation modelling (SEM) was conducted to analyze the data collected from the questionnaires that are collected from 100 Indonesia digital banking users, the data collected were analyzed using SPSS and AMOS. The result of this paper shows that behavioral intention is significantly influenced by Habit, Trust, Price Value, Performance expectancy, Social Influence. This study provided important contribution to practitioners to know what change that is need, Indonesian Bank to know how to deal with digital bank customers, and digital bank users to know what is digital bank and its function. This study was conducted only in Indonesia which may limit various culture that exist in other country that can lead to different results in future research.
<b>IB2018</b> <b>16:45-17:00</b>	<b>The Coupling Effect between Digital Economy and Urban Leisure Industry: A Time Variation Based Quantitative Analysis</b> <b>Presenter:</b> Dan Yuan, Guangdong University of Science and Technology, China <b>Abstract—</b> Digital economy is an important part of realizing the structural optimization and transformation and upgrading of leisure industry structure. Promoting the cross-boundary integrated development of the leisure industry is an inevitable requirement of the social and economic development at the present stage. This paper takes Dongguan as the research area, constructs an evaluation index system of digital economy and leisure industry development, uses entropy weight method to evaluate the comprehensive development level of digital economy and leisure industry, and then analyzes the time variation trend of the coordinated development using coupling coordination degree, relative development model, and correlation analysis model. Results show the following. (1) From 2010 to 2020, the development level of digital economy and leisure


	<p>industry in Dongguan fluctuates to a good trend. (2) In terms of development trend, from the digital economy lag, leisure industry lag to the synchronous development of both. (3) The coupling coordination shows an upward trend, developing from extreme disorder to mild coordination, but there is still a large room for optimization. Therefore, it is necessary to further improve the high-quality development of digital economy and leisure industry according to local conditions, improve their "coupling coordination degree", and build a new system of digital leisure industry to realize the sustainable development.</p>
<b>IB2042</b> <b>17:00-17:15</b>	<p>Indonesian Banking Performance: Impact of Intellectual Capital Analysis</p> <p><b>Presenter:</b> Stephen Kusuma, Bina Nusantara University, Indonesia</p> <p><b>Abstract—</b> The digital banking 4.0 era provides more innovative opportunities for Indonesian banks in providing services to customers as innovation plays a role in answering the rapidly growing competition but changes in consumer behavior require banks to adapt more to digital technology. Thus, this study has the main purpose to measure intellectual capital efficiency and to analyze its association with the return on assets and return of equity as a proxy for profitability and asset turnover as a proxy for the productivity of 24 Indonesian banks between 2016 and 2021. The adjusted value-added intellectual coefficient (A-VAIC) model has been used to measure the hidden value of the firms to make an impact in value creation. Our results show that A-VAIC and one of its components Capital Employed Efficiency (CEE) have significant relationship with ROA, ROE, and ATO. While HCE and INVCE are insignificant for all the financial performance measures.</p>
<b>IB2052</b> <b>17:15-17:30</b>	<p>Organizing and Promoting e-Public Services: Case of Macao E-Government Approach</p> <p><b>Presenter:</b> Ngai Cheong, Macao Polytechnic University, Macao, China</p> <p><b>Abstract—</b>In order to promote E-Government development, the Macao Special Administrative Region (SAR) government has put forward three five-year outlines of the infrastructure construction of E-Government in 2005, 2007, and 2015, respectively. The purposes of these development outlines were basically centralized approaches (motivations from top management), like "top-down" structure, to develop the infrastructure construction of E-Government. Therefore, the Macao SAR government has appropriated a large budget for these items. However, the progress of the whole E-Government in Macao is not in accordance with the above-planned outlines mentioned, and the overall situation is not satisfactory to the Macau citizen. The public and many members of the executive council have often expressed dissatisfaction with the overall development of the E-Government. This paper analyzes the reasons for the unsatisfactory of E-Government in Macao, and proposes an effective approach, that is from a centralized structure to a decentralized cluster since it is much more suitable for the development trend of electronic technology, and a better chance to the success, not only beneficial to the development of Macao E-Government but also as well as the experiences of developing E-Government in other countries and regions, which may expand the coverage of E-Government, effectively reducing administrative operating costs and improving operating efficiency.</p>
<b>IB3018</b> <b>17:30-17:45</b>	<p>Must Financial Excesses Listed Companies Be Generous in the Audit Fees—Based on Logit and OLS Model</p> <p><b>Presenter:</b> Xiang Liu, Tong Wu, Sichuan University, China</p> <p><b>Abstract—</b>The financial condition of "no actual borrowing" is more obvious in Japanese companies, while in China "no actual borrowing" is further extended and interpreted as "Financial excesses". According to the research findings, the phenomenon of financial excesses is also common in Chinese listed companies. The impact of financial excesses enterprises on audit decision-making is still unclear. This article takes the Shanghai and Shenzhen A-shares from 2010 to 2019 as a sample of financially excesses companies for 10 consecutive years. We use Logit and OLS model to test the hypothesis. Will financial excesses listed companies give priority to the "big four" in the selection of accounting firms? Will financial excesses listed companies be generous in the audit fees? The conclusions of this paper are as follows: financial excesses is negatively correlated with the choice of accounting firms. The higher the financial excesses, the more likely the firms are to choose the non-big4 accounting firms. Financial excesses is negatively correlated with the annual audit fee of the enterprise. The higher the financial excesses, the lower the annual audit fee of the enterprise. Our findings have important practical significance and academic value for understanding the relationship between financial excesses and audit decision-making.</p>

<b>IB2006</b> <b>17:45-18:00</b>	<p>The Application of DCF Mode in MCN Evaluation-Case Study of Fengyuzhu Company</p> <p><b>Presenter:</b> Xiaomo Liu, Fuzhou Melbourne Polytechnic, China</p> <p><b>Abstract</b>—With rapid growth of the Internet celebrity economy presented by live e-commerce, MCN company has become a “new outlet” of e-commerce industry. The capital market is paying increasing attention to the valuation and investment of “MCN” company. However, as China’s MCN is still in its infancy and its development is not mature enough, it is difficult to evaluate this kind of company. By using the two-stage free cash model to predict the free cash flow for growing years, this paper evaluates the value and stock market price of Fengyuzhu company, the head MCN company, to a certain extent, thus making up the evaluation research gap of this kind of MCN company and providing reasonable investment decision-making advice for internal management, external investors and external regulators of MCN company.</p>
<b>IB3008</b> <b>18:00-18:15</b>	<p>IT Education and Society, Scope and Electronic Accessibility to the Library System in Regions, Chile: The Case of #Bibliosummer</p> <p><b>Presenter:</b> Loreto Rudolph, Universidad Andrés Bello, Chile</p> <p><b>Abstract</b>—The objective of this study is to explore the scope in regions of technology and innovation, with respect to the library system of the National Cultural Heritage Service, to determine if it can facilitate the development of cultural management. The #BiblioVerano initiative issued by the National Cultural Heritage Service in Chile is considered as a case study, because: (1) it is a digitally promoted initiative to be applied virtually or in person; (2) it is a public campaign that encourages reading and cultural activities; (3) uses social networks as the main communication channel; (4) considers the coordination of a network of libraries at the national level that allow the democratization of reading through new physical and digital spaces. The methodology is carried out by performing a comparative analysis of the library networks of each of the twelve participating regions, based on pre-defined parameters.</p>
<b>IB2039</b> <b>18:15-18:30</b>	<p>Analysis on The Effectiveness of Augmented Artificial Intelligence Implementation in Preventing Fraudulent Financial Statement by Utilizing Beneish M-Score Model</p> <p><b>Presenter:</b> Michael Jonathan, Bina Nusantara University, Indonesia</p> <p><b>Abstract</b>—This study aims to analyze the effectiveness of augmented artificial intelligence implementation, which is PwC’s GL.ai, in preventing fraudulent financial statement by utilizing Beneish M-Score model. The population of this study is all PwC Indonesia’s clients that are listed in Indonesia Stock Exchange for the period of 2017-2021. Purposive sampling is used as sampling procedure and paired sample t-test, effect size statistic, along with statistic descriptive test are applied as the data analysis methods of this study. By utilizing Beneish M-Score model as a proxy to calculate the likelihood of manipulation in companies’ financial statements, this study concludes that the implementation of augmented artificial intelligence, namely PwC’s GL.ai is an effective treatment to prevent the probability of fraudulent financial statement from occurring.</p>
<b>IB2032</b> <b>18:30-18:45</b>	<p>Exploratory Analysis of e-Government Implementations and Blockchain Technology on Document and Identity Verification of Overseas Filipino Workers</p> <p><b>Presenter:</b> Mary Jane C. Samonte, Mapua University, Philippines</p> <p><b>Abstract</b>—The digitalization of Philippine government agencies has started and progressed significantly in the past years. Most, if not all, government agencies already have an established online services system or web application that serves Filipino citizens across the world. However, the connections between these separate systems can mean that some processes can start online and still be completed via a manual offline process. Simple document verification and certificate generation still usually happen through in-person transactions. This systematic review examines relevant literature on e-government, document verification and identity verification, and blockchain and the challenges involved in verifying a document or identity in different business or government agency settings. Some suggestions are proposed for the future research to decide on a more focused system to digitalize the process of the issuance of a certificate.</p>
<b>IB2050</b> <b>18:45-19:00</b>	<p>The Influence of Innovation Resistance and Subjective Norms on the Adoption of Mobile Payment in Taiwan’s Traditional Business Districts</p> <p><b>Presenter:</b> Chih-chieh Hsieh, National Taipei University, Taiwan</p> <p><b>Abstract</b>—The popularity of the Internet and smartphones has led to the rapid development of mobile payment. Because of its fast, convenient and contact-free characteristics, it has accelerated the utilization rate of mobile payment in the context of the raging of COVID-19. Even so, merchants in traditional business circles in Taiwan still do not provide mobile payment services. Secondly, most of the current literature on mobile payment is still discussing the usage behavior of consumers, and</p>

there are few related researches on merchants. Therefore, this study takes merchants in the Dadaocheng business district of Taipei City as the research object, and explores the influence of subjective norms on the introduction of mobile payment by traditional merchants through one-to-one interviews. The research result is that the handling fee will increase the operating cost, affect the profit of the store, and become the main obstacle to the implementation. However, merchants will pay attention to the use of mobile payment by surrounding stores, and will affect the decision of store A as to whether to install.



# TECHNICAL SESSION 2

09:30-12:30	<p align="center"><b>Session 2—E-Commerce and Network Marketing</b></p> <p align="center"><b>Room ID:</b> 812 2188 6324 <b>Passwords:</b> Singapore <b>Link:</b> <a href="https://zoom.us/j/81221886324">https://zoom.us/j/81221886324</a></p>
	<p align="center"><b>Session Chair—TBA</b></p>
<p><b>IB3009</b> <b>09:30-09:45</b></p>	<p>Exploring the Influence of Shopping Values on Live Streaming Purchase Intention: A Multi-Group Analysis of Purchase Frequency</p> <p><b>Presenter:</b> Hsiu-Chia Ko, Chaoyang University of Technology, Taiwan</p> <p><b>Abstract</b>—Live streaming shopping (LSS) is a social commerce model that has attracted much attention from the public in recent years. This study aims to use shopping value theory and theory of reasoned action as the foundation to investigate how consumers' perception of the utilitarian and hedonic values of LSS affect their LSS attitude and purchase intention. This study extends the utilitarian value of LSS to include price discount and two key technological features of LSS, namely, visibility and interactivity, to explore how these factors affect LSS purchase intention through LSS attitude empirically. Further, this study conducts a multi-group analysis (MGA) based on LSS purchase frequency. The results indicate that LSS attitude is positively related to purchase intention. Besides, utilitarian value is more likely to increase consumers' positive LSS attitude than the entertainment value. Among the three types of utilitarian value, price discount has the greatest impact, followed by the visibility and interactivity of LSS. The MGA results unveil that the effect of price discount on LSS attitude is greater among high-purchase frequency buyers; the entertainment value of LSS affects LSS attitude only among low-purchase frequency buyers. The main contribution of this study lies in the discovery that different dimensions of utilitarian value have different effects on LSS attitude and LSS purchase frequency plays an important moderating role in the relationship between perceived values and LSS attitude. The results of this study can be a reference for streamers when developing an LSS sales strategy.</p>
<p><b>IB2105</b> <b>09:45-10:00</b></p>	<p>China's Cross-Border E-Commerce Problems and Solutions from the Perspective of Block Chain</p> <p><b>Presenter:</b> Liu Dan, Chongqing Aerospace Polytechnic, China</p> <p><b>Abstract</b>—In order to adapt to the current economic globalization, traditional commerce has been transformed and upgraded, cross-border e-commerce emerged at the historic moment and developed rapidly, which not only promoted the growth of China's foreign trade and national economy, but also promoted the diversification of China's economy. The cross-border logistics, cross-border payment and cross-border quality problems in the development process of cross-border e-commerce have also become the constraints of cross-border e-commerce. In terms of current economic development, relevant block chain technologies have been put into the field of cross-border e-commerce, and scene application has been carried out in the aspects of origin traceability and quality tracking of imported products. Based on the data tamperability, time stamp technology, point to point transmission technology, distributed technology of the block chain technology are further put into use for cross-border e-commerce, which can solve some of the current and future disputes of cross-border e-commerce. In the future, the extensive application of block chain technology will bring more and more perfect rules and regulations of cross-border e-commerce. The advantages of cross-border e-commerce are more and more obvious, which will lead to more and more rapid economic development.</p>



<b>IB2003</b> <b>10:00-10:15</b>	<p>Study on Purchase Intention in Different Live Streaming Scenarios based on Experimental Approach</p> <p><b>Presenter:</b> Diyuan Xu, Fuzhou Melbourne Polytechnic, China</p> <p><b>Abstract</b>—Live streaming e-commerce has exploded recently. While the live streaming traffic is dominated by the top live streamers, merchants and ordinary live streamers attempt to establish self-operating live streaming, but the number of fans and sales performance are far approaching of the top live streamers. By using the experimental approach, it is found that a significant difference in the purchase intention in three different live streaming scenarios: top live streaming, merchants' self-operating live streaming, and ordinary live streaming. As well as a significant difference in the evaluation from three dimensions: live streamer, product, and live streaming room. More precise analysis results demonstrate that top live streamers are much higher than other streamers in all dimensions after pairwise comparison investigation. Based on the results of the experimental analysis and with reference to consumers' evaluation of the top live streamers, this study provides executable improvement suggestions for merchants' self-operating live streaming and ordinary live streaming.</p>
<b>IB2004</b> <b>10:15-10:30</b>	<p>Research on the Impact of Emotional Adaptation and Product Involvement on Online Video Advertising Effectiveness</p> <p><b>Presenter:</b> Yuke Shi, Harbin Institute of Technology, China</p> <p><b>Abstract</b>—This study uses eye-movement equipment in conjunction with a questionnaire survey to conduct an empirical investigation of the various effects of emotional adaptation and product involvement on advertising effectiveness. The findings indicate that product involvement can indirectly promote users' advertising attitudes and affect advertising effectiveness by affecting consumers' attention, while emotional adaptation between media and advertising can positively adjust the effects of attention level on advertising emotional attitudes. The findings can be utilized to make recommendations about how to implement online video advertising strategies.</p>
<b>IB2017</b> <b>10:30-10:45</b>	<p>Research on Customer Service System based on Short-Form Video Mode—Take TikTok as an Example</p> <p><b>Presenter:</b> Yixin Tian, People's Friendship University of Russia, Russia</p> <p><b>Abstract</b>—This year, with the development of mobile information technology and the popularity of mobile smart devices, the live broadcasting industry has developed rapidly. With the attributes of fast transmission speed and strong social interaction, the network live broadcasting has rapidly acquired large-scale user groups. The major live broadcasting platforms have become the gathering and active places for users and businesses. Businesses can build live customer service systems with very low service costs. To solve the service problems of large-scale users nationwide from time to time, it has the advantages of timeliness, interaction and scale of service, which can not be achieved by traditional customer service system.</p>
<b>IB2116</b> <b>10:45-11:00</b>	<p>An Empirical Study on the Influence of E-commerce Participation Willingness on Rural Revitalization Based on SEM</p> <p><b>Presenter:</b> Ying Zhan, Wuhan Business University, China</p> <p><b>Abstract</b>—It is well known that e-commerce plays an extremely important role in helping farmers increase their income, which is the most direct and effective way to increase their income. Based on structural equation modeling, the paper empirically investigates the effect between the farmers' willingness to participate in e-commerce and rural revitalization, as well as the mechanism between the effect of increasing farmers' income and rural revitalization, furthermore, it also explores how to better use e-commerce to help villagers increase their income. Through the empirical analysis, it can be found that policy promotion positively affects farmers' willingness to participate in e-commerce; "the effect of increasing farmers' income" is partly mediated from "farmers' willingness to participate in e-commerce" to "rural revitalization"; improving "farmers' willingness to participate in e-commerce" can not only directly promote the process of "rural revitalization", but also indirectly affect "rural revitalization" through "increasing farmers' income".</p>
<b>IB2028</b> <b>11:00-11:15</b>	<p>Research on Cold Chain Logistics Service Quality Evaluation Considering Product Freshness under Community Group Buying</p> <p><b>Presenter:</b> Hui Ming, Nanjing Audit University Jinshen College, China</p> <p><b>Abstract</b>—In 2019, The outbreak of Corona Virus Disease 2019 (named COVID-19) has caused great changes in the living habits of residents, and the community group buying model has re-emerged. Under the background of community group buying mode, combined with the characteristics of fresh products, and based on the SEVRQUAL model and the national standard of "Logistics Enterprise Cold Chain Service Requirements and Capability Evaluation Indicators", an evaluation index system of cold chain logistics service quality for community group purchase of fresh products with 5 dimensions</p>

	and 29 indicators is constructed from the perspective of users. Then a 5-level Likert scale was used to design relevant questionnaires, and Xingsheng Youxuan and Meituan Youxuan were used as empirical cases for sample research. Combined collected sample data, the validity and rationality of the index system were tested through reliability, validity testing and factor analysis. The data analysis also shows the problems and influencing factors of Xingsheng Youxuan and Meituan Youxuan in terms of fresh food cold chain logistics service quality, and further suggestions for the development of cold chain logistics services considering product freshness under community group buying is also provided.
<b>IB2049</b> <b>11:15-11:30</b>	<p>Research on Pricing Strategies of Dual Channel Reverse Supply Chain Considering Service Outsourcing in Multi-Regional Situation</p> <p><b>Presenter:</b> Yao Kang, Xi'an University of Technology, China</p> <p><b>Abstract</b>—The increasingly fierce competition in recycling market urges enterprises to actively open up the dual channel reverse supply chain with coexistence of online and offline recycling channels. In order to focus the main business on the disassembly and disposal of waste products, the recycling center has recently outsourced online recycling services including negotiation and consultation to professional third-party platform, which leads to the decision on selecting and optimizing recycling price and service level in different regions. This paper will focus on the dual channel reverse supply chain composed of recycling center, third-party platform and third-party recyclers from different regions, considering that the recycling center has outsourced recycling services to third-party platform, and build the decision model under unified pricing strategy and differentiation pricing strategy based on Stackelberg game theory and use numerical simulations to verify the research conclusion. The research shows that the reduction of service cost coefficient in one region will have a positive impact on the profits of recycling center and third-party platform, and negatively affect the profits of the third-party recyclers in this region. Compared with unified pricing strategy, differentiated pricing strategy can always bring the highest profit to recycling center, third-party recyclers and third-party platform.</p>
<b>IB2030</b> <b>11:30-11:45</b>	<p>ISEKAI: A Virtual Real Estate Web Application Utilizing Constructive Simulation for Improving User Experience in Online Home Tours</p> <p><b>Presenter:</b> Mary Jane C. Samonte, Mapua University, Philippines</p> <p><b>Abstract</b>—This study explores the untapped potential of real estate technology and its effectiveness in user experience in online home tours by implementing panoramic techniques that help users improve their experience in home touring using a web application. The purpose of the application, ISEKAI, is to be a web app for an online virtual home tour. The study aims to measure the effectiveness of the application as well as its usability. This study uses a quantitative method, specifically an experimental-research design, to retrieve valuable information from the study using SUS and UEQ. The results of the findings were positive for SUS; the ISEKAI application received an excellent rating, and overall, the application is a proper-performing application by the users' standards, and its usability and performance were able to enrich the user experience of the users. The same could be said for UEQ as, overall, the user experience of the ISEKAI web application has an excellent rating for all six scales. The ISEKAI application demonstrated that virtual environments positively affect the experience of real estate virtual touring applications and achieve the desired result of the research objectives. Therefore, it is a functional application that has satisfied the needs of the researchers. More participants, partnered professionals in the real estate field, and features can improve the study. Future researchers can enhance the application by improving or implementing other virtual reality techniques.</p>
<b>IB2025</b> <b>11:45-12:00</b>	<p>How does Basic Psychological Need Satisfaction Affect Knowledge Sharing Behavior in Online Health Communities: An Empirical Study</p> <p><b>Presenter:</b> Jinmeng Zhang, Beijing Jiaotong University, China</p> <p><b>Abstract</b>—Online health communities (OHCs), a special type of virtual community, have emerged with the rapid growth of the Internet in which people can interact with others and receive other members' treatment experiences. However, sustainable development of the OHCs require continuous knowledge contributions from members, thus it is vital to explore the factors that impact knowledge sharing behavior from different angles. Confirmatory factor analysis (CFA) and structural equation modelling (SEM) were used to test the hypotheses. We distributed the questionnaire via an online platform. There are 340 valid responses were collected and the questionnaire validity rate was 89.0% (340/382). The results indicated that basic psychological need satisfaction has a positive effect on trust and sense of self-worth; trust has a positive effect on knowledge sharing behavior; sense of self-worth has a positive effect on knowledge sharing behavior. Furthermore, the research</p>

	examined how to improve knowledge sharing behavior based on the findings of the empirical study.
<b>IB2044</b> <b>12:00-12:15</b>	<p>ePondo: A Web-Based Rewards Crowdfunding Platform</p> <p><b>Presenter:</b> William P. Rey, Mapua University, Philippines</p> <p><b>Abstract</b>—The rising population of Filipinos under the poverty line is an increasing concern for the Philippines. Furthermore, the government has provided solutions such as 4Ps to attenuate the numbers. Still, there remains improvement and opportunities beyond these that can contribute to the initiative of the government to reduce poverty in the Philippines. This study aims to develop an application and explore how a rewards crowdfunding platform assists low-income and poor Filipino families through cash grant donations from crowdfunding campaigns and income revenue with commission rewards from small job opportunities in the form of services. With the same concept of the 4Ps of providing human capital investment, this study utilizes a rewards crowdfunding platform to crowdfund human capital investments through donations towards campaigns. In addition, incorporating an income revenue with commission rewards process through small job opportunities in the form of services. The study found that ePondo as a tool could generate service earnings income with commission rewards. Moreover, there were no generated campaign donations during this study. Still, users were found to have high positive endorsement support and continuation rate for campaigns and services, showing that ePondo is a high-yield tool that can assist low-income and poor Filipino families in balancing income generation with expenses output for expenses households.</p>
<b>IB2022</b> <b>12:15-12:30</b>	<p>Mobile Application for Board of Nutrition-Dietetics and Professional Regulation Commission (PRC) Accreditation Process</p> <p><b>Presenter:</b> John Patrick S. Torio, Mapua University, Philippines</p> <p><b>Abstract</b>—The onset of the COVID-19 pandemic delayed certain operations and paved the way to strict travel restrictions. This also meant that the traditional face-to-face process for accreditation inspection was affected. With this, to adapt to the situation, many institutions switched to relying on technology. This study aims to address the digitalization of the Professional Regulation Commission of the Philippines' monitoring and accreditation system. Hence, the objective of the study is to develop an effective digital system for the Professional Regulation Commission of the Philippines. The Agile Development Lifecycle will be implemented in constructing the system. Mobile Application Test and Performance Test are tests designed to evaluate the system's capabilities and usefulness. The outcomes met the study's goal, which led to the tests being successful.</p>

# TECHNICAL SESSION 3

13:30-16:30	<b>Session 3—Data Analysis in Business and Information Technology Application</b> <b>Room ID:</b> 812 2188 6324 <b>Passwords:</b> Singapore <b>Link:</b> <a href="https://zoom.us/j/81221886324">https://zoom.us/j/81221886324</a>
	<b>Session Chair—Prof. Rossazana Ab Rahim</b> <b>Universiti Malaysia Sarawak (UNIMAS), Malaysia</b>
	<b>Session Co-Chair—Assoc. Prof. Bambang Leo Handoko</b> <b>Bina Nusantara University, Indonesia</b>
<b>IB3011</b> <b>13:30-13:45</b>	<b>A Study to Develop Business Model Canvas for IMPARK System Using SWOT Analysis</b> <b>Presenter:</b> Ashly Mariel Cruz, Mapua University, Philippines <b>Abstract—</b> Live streaming shopping (LSS) is a social commerce model that has attracted much attention from the public in recent years. This study aims to use shopping value theory and theory of reasoned action as the foundation to investigate how consumers' perception of the utilitarian and hedonic values of LSS affect their LSS attitude and purchase intention. This study extends the utilitarian value of LSS to include price discount and two key technological features of LSS, namely, visibility and interactivity, to explore how these factors affect LSS purchase intention through LSS attitude empirically. Further, this study conducts a multi-group analysis (MGA) based on LSS purchase frequency. The results indicate that LSS attitude is positively related to purchase intention. Besides, utilitarian value is more likely to increase consumers' positive LSS attitude than the entertainment value. Among the three types of utilitarian value, price discount has the greatest impact, followed by the visibility and interactivity of LSS. The MGA results unveil that the effect of price discount on LSS attitude is greater among high-purchase frequency buyers; the entertainment value of LSS affects LSS attitude only among low-purchase frequency buyers. The main contribution of this study lies in the discovery that different dimensions of utilitarian value have different effects on LSS attitude and LSS purchase frequency plays an important moderating role in the relationship between perceived values and LSS attitude. The results of this study can be a reference for streamers when developing an LSS sales strategy.
<b>IB3015</b> <b>13:45-14:00</b>	<b>The Impact of Electronic Word of Mouth (eWOM) and Perceived Value on Young Customers' Purchase Intention for Open-Shelf Cosmetic Products Shopping at Physical Drugstores</b> <b>Presenter:</b> Shu-Yen Huang, Asia American International Academy, Taiwan <b>Abstract—</b> The cosmetic industry is currently thriving as people gain satisfaction in purchasing beauty-enhancing products. The purpose of this study is to investigate the impact of eWOM and perceived value on young customers' purchase intention for open-shelf cosmetics products shopping at physical drugstores. The target respondents ranged from 15 to 24 years old, as the young generation contributes to a large portion of the cosmetic market. 243 valid questionnaires were received from people who have purchased cosmetic products once in six months in Taiwan. The confirmatory factor analysis and structural equation model were adopted to analyze the relationship between three constructs: eWOM, perceived value, and purchase intention. The results suggest that perceived value impacts purchase intention positively and directly, while eWOM impacts purchase intention indirectly. This result regarding the consumer behavior of young customers could be utilized in the cosmetic industry's marketing strategy to enhance the sales profit and product

	competitiveness.
<b>IB2106</b> <b>14:00-14:15</b>	<p>An Analysis on the Competitiveness of Service Trade of China and Laos under the "One Belt and One Road" Initiative</p> <p><b>Presenter:</b> Liming Hong, Xiamen University of Technology, China</p> <p><b>Abstract</b>—With the adjustment of the world economic structure and the shift of global industries from manufacturing to service industries under the trend of economic globalization, the service trade in the field of international economy and trade has become increasingly important. Service trade has become one of the important factors affecting a country's international competitiveness. At present, Laos' service trade has problems such as irrational industrial structure and weak capital. However, China's service trade development index ranking has remained at the 20th place in the world for three consecutive years, and the overall stability has been maintained. There is great trade complementarity in the service trade between the two countries. Based on the status quo of the service trade between China and Laos under the "One Belt and One Road" initiative, this article uses data analysis methods to study the competitiveness of China-Laos service trade, including China-Laos service trade value, comparative advantage index, trade competition index, and international market share etc., so as to draw the advantages and prospects of the development of China-Laos service trade, and finally put forward countermeasures to promote China-Laos service trade under the "Belt and Road" initiative.</p>
<b>IB2107</b> <b>14:15-14:30</b>	<p>Impact of Enterprise Risk Management Implementation on Fraud Control in Small and Medium Enterprises</p> <p><b>Presenter:</b> Michael Evan, Bina Nusantara University, Indonesia</p> <p><b>Abstract</b>—Technology is developing rapidly in this technological era including businesses. Therefore, the whole population must adapt to the technological change. Adapting to new technology will give a lot of competitive advantages aspect in every business including the small and medium enterprise businesses as it will help the businesses to be more sustainable in the long run. As it is known that most of the SMEs have an essential role in the country's economy growth, especially in developing countries. Therefore, an adaptation to technology is crucial for enterprises to implement. Unfortunately, most of the SMEs have not implemented a risk management system yet which it could create a threat to the sustainability of their enterprises. Risk management itself is important to have for enterprises as it can develop a strategy that is needed to compete with competitor, minimize and control risks from internal and external factor such as fraud, and to make the enterprise itself becoming more sustainable in the long run. The purpose of this study aim is to observe the impact on implementing enterprise risk management (ERM) and determine whether the implementation of risk management could control and minimize fraudulent activity within the enterprises and keeps the company sustainable in the long run.</p>
<b>IB2036</b> <b>14:30-14:45</b>	<p>Sentiment Analysis on Book Reviews Using Convolutional Neural Network (CNN) Long Short-Term Memory (LSTM) Hybrid</p> <p><b>Presenter:</b> Lenz Baron S. Balita, Mapua University, Philippines</p> <p><b>Abstract</b>—Sentiment analysis is one of the most prominent methods on gathering and analyzing insightful textual data from various sources. The information produced from such a method can be imperative in understanding the general public's sentiment on a certain product or service. Over the years, countless sentiment analysis models have already been established using known algorithms such as Naive Bayes, Support Vector Machine, and many more. However, with the advent of novel technologies and neural networking, recent studies have employed Convolutional Neural Network (CNN) and Long Short-Term Memory (LSTM) Recurrent Neural Network together to formulate more efficient and modernized models (Rehman, Malik, Raza, &amp; Ali, 2019). As such, the study proposed a similar model to analyze the sentiments of book user reviews from GoodReads categorized according to three distinct genres – children's, young adults', and romance. The paper also aimed to determine the viability and effects of amalgamating features such as Word2Vec, POS, and SenticNet to the overall accuracy (Ayutthaya &amp; Pasupa, 2018). Once the model was trained to the procured dataset, the results suggested that combining Word Embedding, POS, and SenticNet features drastically improves its performance in contrast to other tested variations. Amalgamating the three features to a CNN-LSTM hybrid model yielded an F1-score of 90%; whilst other variants with lacking features or a standalone CNN or LSTM model only resulted to F1-scores around 86% below. Graphing the</p>



	performance of all the constructed models to an ROC curve also indicated the effectiveness of the proposed model – having an AUC value of 0.9588.
<b>IB2047</b> <b>14:45-15:00</b>	<p>Research on the Construction of "5 + 2" Model of After-school Service in Primary and Secondary Schools under the Background of Big Data</p> <p><b>Presenter:</b> Haoyue Wang, Shanghai Institute of Technology, China</p> <p><b>Abstract</b>—With the introduction of the "double reduction" policy, after-school services in primary and secondary schools have become a key concern of students, parents and schools. In order to improve the quality of education and management efficiency. Hangzhou has used big data and Internet technology to create an "after-school service" system integrating family, school, society and bureau, which meets the diverse needs of school management and students, broadening the access channels of social forces and reducing the pressure on schools. This paper introduces the Hangzhou after-school "5 + 2" system in detail from three aspects of the overall system architecture, operation process, technology, and system functions. This paper puts forward specific suggestions for the future development mode of after-school services in primary and secondary schools.</p>
<b>IB2015</b> <b>15:00-15:15</b>	<p>Predicting Exchange Rate with FinBERT-Based Sentiment Analysis of Online News</p> <p><b>Presenter:</b> Petr Hajek, University of Pardubice, Czech Republic</p> <p><b>Abstract</b>—The area of news-based sentiment is attracting growing attention in finance due to its recognized effect on traders' sentiment and risk attitudes. Recently, contextualized word embedding models have been increasingly used to detect sentiment in online news. Despite this interest, few studies have considered the finance-specific news sentiment for financial prediction tasks. In this paper, we present a contextualized sentiment analysis model using a state-of-the-art FinBERT language model. We evaluate the performance of the fine-tuned FinBERT sentiment analysis model in the task of EUR/USD currency movement prediction. The results reported here confirm that the fine-tuned FinBERT is more effective than both the existing lexicon-based sentiment approaches and the survey-based Sentix index. In particular, substantial improvement in prediction performance is reported for different prediction horizons, ranging from 1-day-ahead to 180-day-ahead predictions.</p>
<b>IB2029</b> <b>15:15-15:30</b>	<p>Factors Affecting Credit Card Users' Potential in Maintaining Good Credit Standing</p> <p><b>Presenter:</b> Mary Jane C. Samonte, Mapua University, Philippines</p> <p><b>Abstract</b>—The risk of a credit card user going into more than 30 days of debt and hence going into bad credit standing leaves to be a concern for both the user and credit card providers, but there could be multiple factors and reasons why would a person breaks agreements and go out of good credit standing. Using exploratory data analysis, the paper examines a Kaggle credit card dataset to examine and identify if a credit card user or applicant can maintain a good credit standing based on their user information. Multiple different affecting factors were found, identified, and classified if it has good correlation, weak correlation, or no correlation to good credit standing. The correlating factors are recommended to be potentially fed into a regression model to be able to predict users at risk of being in bad credit standing.</p>
<b>IB2031</b> <b>15:30-15:45</b>	<p>An Exploratory Analysis of YouTube Trending Video Data and its Inclusion in the Trending Page</p> <p><b>Presenter:</b> Mary Jane C. Samonte, Mapua University, Philippines</p> <p><b>Abstract</b>—The YouTube trending page is one of the most desired goals to seek for YouTube content creators in order to boost ad revenue and channel growth with more views. This research seeks to be an analysis of the YouTube trending page to answer various questions in its relation such as the most viewed trending videos, most trending video category, and the factors that make a video trending. Using Exploratory Data Analysis, statistical data was derived that answers these questions. It is found that factors such as Likes, Dislikes, Comments, and Views are related to trending popularity, Category, Publish Date, and Trending Date have a low correlation to trending popularity. It is recommended for the research findings to be used in a prediction model in order to potentially predict the likeliness that a video would hit the trending page.</p>

<b>IB2040</b> <b>15:45-16:00</b>	<p>The Effect of Privacy Concerns on the Acceptance of the Global Navigation Satellite System (GNSS): The Application of Technology Acceptance Model (TAM)</p> <p><b>Presenter:</b> Che Hsi Chang, Kang Chiao International School, Xiugang Campus, Taiwan</p> <p><b>Abstract</b>—As technology thrives in this era, the gain from the improvements comes with a cost. The purpose of this study is to investigate the influence of privacy concerns on the acceptance of position tracking technologies, such as the Global Navigation Satellite System (GNSS), based on the technology acceptance model (TAM). 265 valid questionnaires were collected and analyzed, a significant majority of which was conscious about the use of the GNSS, and some were even concerned about the fact that they are constantly under the use of the system. A theoretical model with corresponding hypotheses was proposed and the structural equation model (SEM) was applied to identify these constructs, including privacy concerns, perceived usefulness and perceived ease of use, that have the influence on the behavior intentions to accept the GNSS. The results of the study reveal that the privacy concerns have a positive effect on both perceived usefulness and perceived ease of use, perceived ease of use has a positive effect on perceived usefulness, furthermore, both perceived ease of use and perceived usefulness also have a positive effect on the behavior intention to use and accept the GNSS.</p>
<b>IB2007</b> <b>16:00-16:15</b>	<p>A Review on the Cryptocurrency (A Blockchain Technology) Scams in the Philippines</p> <p><b>Presenter:</b> Eric Blancaflor, Mapua University, Philippines</p> <p><b>Abstract</b>—With the advancement of technology, most of the usual things that are done manually are now being automated or done with the help of machines. The result of these innovations has clearly helped mankind make life easier and more manageable given the increasing number of responsibilities a person attains through time. With that being said, one of the innovations that will be discussed in this study is “Cryptocurrency”. A cryptocurrency is a form of digital currency that is distributed across numerous computers. In this study, the researchers will discuss what a cryptocurrency is, its relevance, and how cryptos work; as well as the types of scams a victim can fall into and how to prevent these scams from taking place.</p>
<b>IB2012</b> <b>16:15-16:30</b>	<p>Therabeats: Business strategies for the proposed Psychotherapy Telemedicine using SWOT Analysis and the Six Thinking Hats</p> <p><b>Presenter:</b> Grace Lorraine Intal, Mapua University, Philippines</p> <p><b>Abstract</b>—TheraBeats, the proposed Psychotherapy telemedicine system includes typical features of telemedicine systems in the market such as booking appointments, payment modules, chats and videoconferencing, and profiling. It's edge to other telemedicine is the integration of audio psychotherapy tools or audio interventions. It also includes a sensory substitution feature for the Deaf community to experience the audio interventions and it is done using audio visualization through the mobile screens and through amplified bass lines and volume of the audios. The study aims to determine marketing strategies utilizing SWOT analysis and TOWS matrix in evaluating gathered data from the deployed Six Thinking Hats questionnaire. It used a quantitative and qualitative approach in analyzing gathered data from the conducted online surveys. The performed SWOT analysis and TOWS matrix were able to generate possible marketing strategies for the proposed telemedicine system.</p>



# POSTER SESSION

16:45-20:00	<p align="center"><b>Poster Session—Econometrics and Economic Mathematics</b></p> <p align="center"><b>Room ID:</b> 812 2188 6324 <b>Passwords:</b> Singapore <b>Link:</b> <a href="https://zoom.us/j/81221886324">https://zoom.us/j/81221886324</a></p>
IB2201	<p>Research on the Change of the SMB of the Medical Sector before and after the Epidemic</p> <p><b>Presenter:</b> Yue Wu, Zhejiang University of Finance and Economics, China</p> <p><b>Abstract</b>—This study confirms that the applicability of the Fama-French five-factor model in the Chinese market is related to the characteristics of the Chinese stock market, studies the factor differences between GEM and STB in China market and uses random forest algorithms to make predictions in different types of stock markets. It is concluded that SMB is the most significant in the Chinese market, GEM and STB has no significant difference. In addition, this work examines the change in returns of the pharmaceutical sector before and after the epidemic, perform time series analysis and independent sample mean test on the SMB size factor, then analyzes the policy reasons for the trend of the pharmaceutical sector and draw the conclusions that the epidemic has a negative effect on the SMB and the time trend has a positive effect on the SMB factor under the influence of controlling the epidemic.</p>
IB2202	<p>Using the Hedonic Model to Analyze how the Characteristics Impact the Housing Price in Beijing during 2011-2018</p> <p><b>Presenter:</b> Linxiaodan Cui, University of Melbourne, Australia</p> <p><b>Abstract</b>—In China, house buying, and housing prices have always been hot issues in the people's livelihood field and the economic field. Especially in recent years, the high housing price, the difficulty of houses buying, and the difficulty of renting a house in big cities such as Beijing and Shanghai have been troubling consumers and the Chinese government. Many real estate development enterprises have also invested more effort and resources in this industry. In this context, by using the Hedonic regression method and econometrics theory and approaches, this paper analyzes the market price of houses in Beijing by using data from "LianJia web" and tries to build two models of a full linear Hedonic model and a log-linear Hedonic model to fit the housing price in Beijing from 2011 to 2018, and the modeling results are analyzed to show the impacts of different characteristic variables on it.</p>
IB2203	<p>Momentum: A New Look on the Old World</p> <p><b>Presenter:</b> Haoran Zhang, Washington University of St. Louis, USA</p> <p><b>Abstract</b>—With the rapid growth of the stock market, many researchers examined the profitability and market efficiency of various trading strategies with the idea of Momentum Investing. This study optimizes the Moving Average Convergence-Divergence (MACD) oscillator and tests its performance under different trading strategies. The research simulates the trading process of 40 U.S. industry portfolios from 1926 to 2021 using different MACD oscillators constructed by the Exponential Moving Average (EMA) indicators of different decay parameters. To acquire the optimal MACD oscillator, the study performs the OLS linear regression analysis on each industry's stimulated excess returns and excess industry portfolio returns and uses the corresponding regression coefficients (alpha and beta) as the assessment criteria of the performance. To further optimize the model, the study improves the traditional trading strategy, the simple-crossover operation, to the n-day holding strategy, which aims to weaken the influence of false signals. The result shows that MACD strategies generally have positive alpha, hinting that investor can utilize this indicator to diversify portfolios and hedge their risks.</p>
IB2204	<p>Event Studies: the Effect of Leaders' Summit on Electric Vehicle and Clean Power Market</p> <p><b>Presenter:</b> Yuhao Zhao, Bates College, USA</p> <p><b>Abstract</b>—The leaders' climate summit was held in 2021 at a time of growing concern about global warming. This paper collected the S&amp;P 500 Kensho Electric Vehicle Index and S&amp;P 500 Kensho Clean Power Index within 255 days, and the event research method was adopted. Explores and compares electric vehicles and clean energy on the U.S. stock market during the climate summit. Through the</p>

	<p>visualization of empirical results, at a 95% confidence level, we found that the area beyond the confidence interval was minimal, which was not enough to indicate that this event had a significant impact on these two parts. Therefore, further research is still needed, especially during which environmentally friendly policies become essential, and lots of those kinds of policies appear among different countries.</p>
IB2205	<p>Related Return Patterns Adjustment under the Impact of COVID-19 on Hedge Funds</p> <p><b>Presenter:</b> Bokai Wang, Shanghai University of Finance and Economics, China</p> <p><b>Abstract—</b>The latest threat to global health is an ongoing outbreak of a respiratory disease known as COVID-19 and has become a global concern. The exponential spread of the COVID-19 pandemic shook up global markets and caused major adjustments to the world economy. In this paper, we investigate whether these changes affected hedge fund return patterns. We decompose hedge fund index returns into Fama-French factors using data from 2017 – 2019 and compare it to decompositions using data from 2020 and 2021 to date. Our empirical results suggest that the Fama-French factor exposures changed on the conventional hedge funds. This has reflected that COVID-19 has an impact on the return patterns of the hedge funds we selected. The findings have implications for investors and major players in the investment markets. Our research is useful for predicting how the performance of hedge funds changes in market disruption.</p>
IB2206	<p>Analysis of Regulation Policies in May 2021 on Cryptocurrency Market</p> <p><b>Presenter:</b> TBA</p> <p><b>Abstract—</b>In May 2021, Chinese government issued a series of policies to strengthen the supervision of cryptocurrency market. Based on the principle of event study and combing of Chinese and American cryptocurrency policies, this paper selects May 18 as the event announcement day and constant mean return models are constructed to measure the abnormal returns of top ten market value coins. It is found that the strengthening of regulatory policies had an evidently negative influence on the market. Combined with the analysis of the features of typical cryptocurrencies, this paper figures out that on the whole there is a strong correlation between the abnormal returns of currencies in the cryptocurrency market. At the same time, by analyzing the performance of daily abnormal returns of Bitcoin and Ether in the event window, this study draws a conclusion that investors in that market have patent speculativeness. In addition, complimentary survey on stable coin is also done to verify the overall policy impact, which indicates that the market value fluctuation of stable coin is consistent with the abnormal return changes of the whole market. On this basis, through information query and literature reference, this paper also forecasts the evolution trend of regulatory policies in various countries and the development of the overall cryptocurrency market by period.</p>
IB2207	<p>An IS-LM Equilibrium Analysis on Trade Balance and Exchange Rate during the China-US Trade</p> <p><b>Presenter:</b> Junhao Chen, Seattle Country Day School, USA</p> <p><b>Abstract—</b>This study examines the China-US trade and its impact on US trade deficit during 2017-2022. It employs the IS-LM equilibrium model and multiple linear regressions to examine how various phases of trade tariff, the US government deficit, and bilateral foreign exchange rate affect the US trade deficit. It shows that the Phases 2 &amp; 3 tariffs initiated by the US have significant impact on the China-US trade. It also reveals that the US government deficit has a major contribution to the US trade imbalance. In sum, the results are consistent with interest rate parity (IRP) theory and the theory of comparative advantage, suggesting that protectionism is unsuccessful in solving international trade imbalance.</p>
IB2208	<p>Practical Teaching of Finance Major Based on Computer Teaching Platform</p> <p><b>Presenter:</b> Minyi Li, Xinyu University, China</p> <p><b>Abstract—</b>The Internet itself and various Internet-based applications have become the content of school teaching, and a platform is needed to support the implementation of such teaching activities. The teaching platform uses the school's original internal local area network to build a network teaching platform by building WEB servers, FTP servers, forums, online streaming media, etc. Due to the rapid development of China's financial industry, the state attaches more and more importance to its development. In this situation of rapid development, my country's financial industry is facing changes. Based on the perspective of computer teaching platform, this paper analyzes the problems existing in the current practical teaching of financial majors, and puts forward corresponding improvement measures after in-depth discussion of the problems. In view of the complete computer resources, the relatively mature and stable campus network, an independent computer network teaching platform has been established. This platform has the functions of organizing, tracking,</p>

	evaluating, delivering, presenting and managing learning activities, which can promote interactive learning among learners. The first task is to base on classroom practice teaching, and secondly, it is important to comprehensively strengthen the practical ability of finance majors. On this basis, provide more high-quality talents for the financial industry.
IB2209	<p>Simulation Analysis of American Style Option Pricing Incorporating Monte Carlo Simulation Models</p> <p><b>Presenter:</b> Yu Zhao, Lanzhou University, China</p> <p><b>Abstract</b>—Because American options generally do not have analytical solutions, their pricing has always been a hot issue in the theoretical and industry circles. American options have always dominated the market in terms of ownership because they give buyers more freedom to trade, but their early tradable characteristics make it difficult to simulate their pricing, and traditional methods are not adaptable and accurate enough to be effectively applied to multiple Actual environmental requirements for American-style options for variables and parameters. In recent years, with the development of option pricing theory, some American options pricing methods based on Monte Carlo simulation method have appeared. To solve the problem of inefficiency of reverse substitution, this paper proposes a Monte Carlo method to improve the efficiency of pricing. Based on this, this paper firstly analyzes the characteristics and simulation methods of the Monte Carlo model in depth, especially for the shortcomings of the model, and gives a strategy to reduce its variance. Secondly, the optimization strategy and optimization steps of the stochastic process of option pricing are designed, and the variable control strategy is analyzed from the importance sampling simulation and stratified sampling simulation of American options. Finally, this paper verifies the effectiveness of the Monte Carlo model based on multiple sets of option data, and further compares the differences between the models before and after optimization in the American option pricing simulation. The results of this paper show that the fusion of the Monte Carlo simulation model can greatly improve the pricing of American options.</p>
IB2210	<p>Correlation between CBCFI and Carbon Trading Price Mining from An Econometric Perspective</p> <p><b>Presenter:</b> Jianli Li, State Grid Sichuan Electric Power Company Tianfu New District Power Supply Company, China</p> <p><b>Abstract</b>—As China's carbon emissions trading market continues to develop, the study of factors affecting carbon trading prices has become increasingly important. Data mining is a kind of analyzing technology of considering from the data itself, carrying on the scientific classification, estimation, prediction, and sequence pattern mining. The mining process is capable to provide good support for decision making. Data mining also has certain applications in carbon trading price analysis. This paper investigates the relationship between carbon trading price and CBCFI based on econometric methods, so as to obtain more accurate data analysis results, and provide more reliable trading strategies for carbon rights trading. Econometrics, a comprehensive discipline combining statistics, computer science and economics, has been widely used in the field of carbon emissions trading and is an excellent choice to study the correlation between China's coastal coal transportation price index and carbon trading prices. We constructed a VAR model using the China Coastal Coal Transportation Price Index and the China Carbon Emissions Trading Market Index to determine the mechanism of the relationship between these two indices. According to the results of this study, there is a one-way Granger causality between the carbon emission trading price and the China carbon market price index. Moreover, a hybrid nonlinear model of VAR and BP was constructed to forecast the CBCFI and carbon trading price, where results indicated the nonlinear combination model work well with both objects.</p>
IB2211	<p>Carbon Trading Price Forecasting with a Hybrid Arima and LSTM Deep Learning Methodology</p> <p><b>Presenter:</b> Yuanyuan Hu, State Grid Sichuan Electric Power Company Tianfu New District Power Supply Company, China</p> <p><b>Abstract</b>—China's carbon trading market is an emerging market and is influenced by many factors. Considering the regular characteristics of carbon trading price as an important indicator of market development, it is important to make scientific predictions about the price of carbon trading. Since more and more artificial intelligence models (including machine learning models and neural network models, etc.) have been applied to this field in recent years compared to previous studies that mainly used traditional econometric models. This paper tests and evaluates common artificial intelligence models and econometric models in the field of carbon trading price forecasting, taking the carbon trading price of Shenzhen from 2013 to 2020 as an example. It is found that the ARIMA -LSTM hybrid model has the best prediction effect, and the prediction results indicate that the Shenzhen carbon trading market will experience significant fluctuations in the next three years and the carbon trading</p>

	price will remain unstable.
IB2212	<p>A Novel Multi-layer Associate Rules Mining Algorithm for Relations between Carbon Emission Futures Price and European Economy</p> <p><b>Presenter:</b> Bing He, State Grid Sichuan Electric Power Company Tianfu New District Power Supply Company, China</p> <p><b>Abstract</b>—The multi-dimensional association rule algorithm in data mining was used to quantitatively analyze the influence relationship between carbon emission futures price (CEFP) and ten influencing Europe economic factors in four aspects: population and employment, consumption, domestic product, foreign trade. The results showed that, in terms of population and employment factors, unemployment was negatively correlated with CEFP. In terms of consumption, CEFP is positively correlated with consumption level. In terms of domestic product, CEFP price is positively correlated with gross domestic product, gross added value and total economy. Data mining technology is used to quantitatively analyze the correlation degree between CEFP and influencing factors, in order to provide scientific basis for the relevant departments to invest CEFP.</p>
IB2213	<p>Application of Classifier Model Based on BP Neural Network in Financial Analysis Field</p> <p><b>Presenter:</b> Chang Qu, Shanghai Publishing and Printing College, China</p> <p><b>Abstract</b>—With the vigorous development of the economic industry, various types of financial management mechanisms have become the basic trend in the development process of the company, and gradually enhance the basic management attention of each company's analysis field. In this paper, the basic company financial model under each classification is comprehensively interpreted, and the basic laws and practical effects of different stages are analyzed, so as to infer the force of classifier financial analysis model on the actual company management development field. On this basis, this paper puts forward the BP neural network model innovatively. Starting from the linear maximum interval and its optimal classification integration model, through the economic construction of the operation mode of listed companies, based on the application of research data in practical research, this paper obtains the classifier model based on BP neural network financial analysis application construction system model, and based on this, takes listed companies as the starting point. The main classifier Financial Optimization Analysis and the upgrading exercise of BP neural network mode, finally establish the most effective index type, summarize the best benefit of the classifier model financial analysis, in order to achieve the diversification goal of the classifier model financial analysis field constructed by BP neural network.</p>

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