

BESC 2019

The 6th International
Conference on
Behavioral, Economic,
and Socio-Cultural
Computing



Sponsors



CONFERENCE PROGRAM

October 28-30, 2019
Beijing, China

BESC 2019



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Welcome Message

On behalf of the organizing committee, it is our great pleasure to welcome you to Beijing, China for the 6th International Conference on Behavioral, Economic and Socio-cultural Computing (BESC 2019). BESC is a premier forum in which academic researchers and industry practitioners from data mining, artificial intelligence, statistics and analytics, business and marketing, finance and politics, and behavioral, economic, social and psychological sciences could present updated research efforts and progresses on foundational and emerging interdisciplinary topics of BESC, exchange new ideas and identify future research directions. Following the successful BESC'14 in Shanghai, China, BESC'15 in Nanjing, China, BESC'16 in Durham, NC, USA, BESC'17 in Krakow, Poland, BESC'18 in Kaohsiung, BESC'19 will take place in Beijing, China. We have a three-day attractive program consisting of keynote and invited talks, main track technical paper oral presentations, and special sessions in several popular topics.

This year, we received 87 high-quality submissions from 12 countries to both the main and special tracks. The submission number set a record over the last five years, reflecting the growing boom of new information technologies such as big data, artificial intelligence and advanced computing all over the world. The paper selection process was very competitive. From these submissions, 18 (20.7%) were accepted as regular papers. Each submitted paper was considered by the Program Committee (PC) members and external reviewers, and evaluated against criteria such as relevance, significance, technical soundness, novelty, and clarity. Every paper received at least two reviews, in most cases three, and in some cases up to five. Finally, the program co-chairs read the reviews, the original papers, and called for additional reviews if necessary to make final decisions. The entire review team (PC members, external reviewers, and co-chairs) expended tremendous effort to ensure fairness and consistency in the paper selection process.

The success of BESC 2019 would not have been possible without the effort and support of numerous people from all over the world. First of all, we would like to thank the Program Committee members and external reviewers for their engagements in providing rigorous and timely reviews. It was because of them that the quality of the papers in this volume is maintained at a high level. We wish to express our gratitude to the program co-chairs, Lin Li (Wuhan University of Technology, China), Haoran Xie (Hong Kong Management University, China) and Uesugi Shiro, Matsuyama University, Japan). We are also thankful to the special session chair, Xiaohui Tao (University of Southern Queensland, Australia), the local arrangement chair, Jun Wu (Beijing Jiaotong University, China), the publication chair, Yi Jin (Beijing Jiaotong University, China), and the financial chair, Zhu Teng (Beijing Jiaotong University, China).

We gratefully acknowledge the support of the organizing institutions IEEE SMC Society, China Automation Association, Beijing Jiaotong University, University of Technology, Sydney, as well as the financial support from SAP UCC China, Taishan Information Technology Co., Ltd. Special thanks to EasyChair, whose paper submission platform we used to organize reviews and collate the files for these proceedings.

Last but not least, we also want to thank all authors and all conference participants for their contribution and support. We hope all the participants took this valuable opportunity to share and exchange their ideas and thoughts with one another and enjoyed their time at BESC 2019.

Yidong Li
General Chair of BESC 2019
October 2019

Organizing Committee

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Program Committee

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Jingling Yuan	Wuhan University of Technology, China
Jianwei Zhang	Iwate University, Japan
Wenping Zhang	Renmin University of China, China

Keynotes

Oct. 28 8:30—9:30 AM

Keynote 1

Room:Lecture Hall, 2/F

Title: Socio-economic Impacts of Future IT Applications in Transport

Prof. George A. Giannopoulos (Academician of the Athens Academy)



Abstract: There are four key megatrends that appear today as major sources of innovation in the Transport sector. They have the potential for a revolutionary change in the way we move and carry our freight, especially in urban areas. They are the: a) connected and cooperative transport operation in which all vehicles (cars, ships, and aircraft) are connected through fast 5G telecommunication networks and the Internet of Things for the exchange of data and information among them and between them and the infrastructure or the control centers, b) autonomous/automatic vehicles i.e. without driver, c) shared mobility services i.e. the shared use of vehicles, and d) clean mobility i.e. use of clean fuels including hydrogen and electricity. They are all four referred to, by the acronym CASE that stands for: Connected – Autonomous – Shared – Electric. They are all strong users of IT in all phases of their operation.

After a brief presentation of these megatrends and their potential for future full deployment, the presentation moves on to examine the potential socio-economic implications of the 4 CASE megatrends. More specifically, it examines the implications on the:

- √Auto industry;
- √Mobility service providers;
- √Businesses;
- √New technological development; and
- √Society.

Then there is a brief presentation of an ambitious new demonstration project that starts in Europe called SHOW. This project will deploy more than 70 autonomous vehicle demonstrators in 7 different countries and urban areas of Europe and will test different types of operation. The main objective is to investigate the problems associated with the smooth introduction of autonomous transport services in the (conventional) urban traffic and the socio-economic implications that such operations may have.

Finally, the presentation will discuss the implications and challenges that all CASE innovations will have for the Academia, i.e. the way we teach and educate our young professionals. Transport education in the future must become relatively short, inexpensive, more related to the AI and IT applications in CASE transport services and fully experiential (based on experience and the practice). New curricula and courses offered must be fully aligned to cover the needs of the market.

Short Bio: Prof. George A. Giannopoulos is transportation planner, Professor emeritus of the Aristotle University of Thessaloniki and corresponding member of the Academy of Athens. He is the immediate past Director of the Hellenic Institute of Transport, the National Transport research Organisation of Greece, which he founded and chaired for 15 years. He is currently advisory Professor at the Beijing Jiaotong University. He has extensive experience in Transportation Planning and Policy issues as well as on ITS, urban mobility plans, freight transport and distribution. For six years he was co-chair of the TRB International Cooperation Committee working on international research governance and cooperation issues as well as on research implementation.

For 12 years he was member and chair (for 7 years) of the Transport Advisory Group of the European Commission (EC) and he has served on many other Committees and working Groups of the EC. He has participated in more than 200 studies or research projects, over the past 35 years, in most of them as coordinator. He has published 260 scientific papers and articles in scientific magazines and Conferences, as well as 16 books, four of which in English. His two most recent books, are: "Publicly funded Transport research in the P.R. China, Japan and Korea", published by Springer (2018), and "The accelerating Transport Innovation revolution: A global case study based analysis of current trends and experience", published by Elsevier (2019).

Prof. Giannopoulos has been teaching as Visiting or Advisory Professor in well-known Chinese Universities for the last 6 years or so. Among them, the Beijing Jiaotong University (currently), the Chang'an University in Xian and the Ningbo University of Technology.

Oct. 28 9:30—10:30 AM

Keynote 2

Room:Lecture Hall, 2/F

Title: Network Econo-physics for Financial Market Analysis

Prof. Edwin Hancock (The University of York)



Abstract: In recent work we have developed new theoretical tools for time varying network analysis based on models drawn from statistical physics, manifold learning theory and deep learning. By combining ideas from modern machine learning, quantum computing and complex networks, this leads to new methods for financial market analysis. In this talk I will review the origin of these ideas, and explain how they can be applied to problems arising in financial market analysis. The talk commences by detailing how ideas from statistical physics and quantum computing can be used to understand how network entropy can be computed for both directed and undirected graphs, and used to both understand and model how financial networks evolve with time. Moreover, with tractable ways of computing network entropy to hand we can develop kernel methods and design deep learning architectures for analyzing and visualising financial market time-evolution. This corpus of work can be thought of as defining a distinct interdisciplinary research area, which we refer to as "Network Econo-physics".

Short Bio: Edwin R. Hancock holds a BSc degree in physics (1977), a PhD degree in high-energy physics (1981) and a D.Sc. degree (2008) from the University of Durham, and a doctorate Honoris Causa from the University of Alicante in 2015. From 1981-1991 he worked as a researcher in the fields of high-energy nuclear physics and pattern recognition at the Rutherford-Appleton Laboratory (now the Central Research Laboratory of the Research Councils). During this period, he worked on high energy physics experiments at the Stanford Linear Accelerator Center (SLAC) providing the first measurements of charmed particle lifetimes. He also held adjunct teaching posts at the University of Surrey and the Open University. In 1991, he moved to the University of York as a lecturer in the Department of Computer Science, where he has held a chair in Computer Vision since 1998. He leads a group of some 25 faculty, research staff, and PhD students working in the areas of computer vision and pattern recognition. His main research interests are in the use of optimization and probabilistic methods for high and intermediate level vision. He is also interested in the methodology of structural and statistical and pattern recognition. He is currently working on graph matching, shape-from-X, image databases, and statistical learning theory. His work has found applications in areas such as radar terrain analysis, seismic section analysis, remote sensing, and medical imaging. He has published about 185 journal papers and 650 refereed conference publications. He was awarded the Pattern Recognition Society medal in 1991 and an outstanding paper award in 1997 by the journal Pattern Recognition. He has also received best paper prizes at CAIP 2001, ACCV 2002, ICPR 2006, BMVC 2007 and ICIAP in 2009 and 2015. In 2009 he was awarded a Royal Society Wolfson Research Merit Award. In 1998, he became a fellow of the International Association for Pattern Recognition. He is also a fellow of the Institute of Physics, the Institute of Engineering and Technology, and the British Computer Society. In 2016 he became a fellow of the IEEE and was named Distinguished Fellow by the British Machine Vision Association. In 2018 he received the Pierre Devijver Award from the IAPR. He is currently Editor-in-Chief of the journal Pattern Recognition, and was founding Editor-in-Chief of IET Computer Vision from 2006 until 2012. He has also been a member of the editorial boards of the journals IEEE Transactions on Pattern Analysis and Machine Intelligence, Pattern Recognition, Computer Vision and Image Understanding, Image and Vision Computing, and the International Journal of Complex Networks. He has been Conference Chair for BMVC in 1994 and Program Chair in 2016, Track Chair for ICPR in 2004 and 2016 and Area Chair at ECCV 2006 and CVPR in 2008 and 2014, and in 1997 established the EMMCVPR workshop series. He was a Governing Board Member of the IAPR from 2006 to 2016, and was Second Vice President of the Association (2016-2018).

Keynotes

Oct. 29 8:30—9:30 AM

Keynote 3

Room:Lecture Hall, 2/F

Title: Real-time Instance Recognition Made Simpler

Prof. Chunhua Shen (The University of Adelaide)



Abstract: In this talk, I will present some recent work we have been doing on instance level recognition tasks including object detection, instance segmentation and key point detection. First, we propose a fully convolutional one-stage object detector (FCOS) to solve object detection in a per-pixel prediction fashion, analogue to semantic segmentation. Almost all state-of-the-art object detectors such as RetinaNet, SSD, YOLOv3, and Faster R-CNN rely on pre-defined anchor boxes. In contrast, our proposed detector FCOS is anchor box free, as well as proposal free. By eliminating the predefined set of anchor boxes, FCOS completely avoids the complicated computation related to anchor boxes such as calculating overlapping during training. With the only post-processing non-maximum suppression (NMS), FCOS with ResNeXt-64x4d-101 achieves 44.7% in AP with single-model and single-scale testing, surpassing previous one-stage detectors with the advantage of being much simpler. For the first time, we demonstrate a much simpler and flexible detection framework achieving improved detection accuracy. We extend FCOS by applying the idea to other instance-level tasks such as instance segmentation and key point detection. We hope that the proposed framework can serve as a simple and strong alternative for many other fundamental instance-level tasks.

Short Bio: Chunhua Shen is a Professor at School of Computer Science, University of Adelaide, leading the Statistical Machine Learning Group at School of Computer Science. He is part of the Australian Institute for Machine Learning. His research interests are in the intersection of computer vision and statistical machine learning. Professor Shen has co-authored 20 papers in IEEE Transactions on Pattern Analysis and Machine Intelligence, and 56 papers in IEEE Conference on Computer Vision and Pattern Recognition (CVPR). His Google scholar H-index is 60.

Oct. 29 9:30—10:30 AM

Keynote 4

Room:Lecture Hall, 2/F

Title: The Global Digital Economy: Opportunities & Challenges

Dr. Kris Singh (SRII)



Abstract: This keynote talk will discuss the following topics:

- Digital disruptive transformation of Global Economy
- Digital Technology: Advances & Challenges
- Future of Work
- Innovating Education System
- Academia, Industry & Government partnership

Short Bio: Kris Singh is the founder and CEO of Service Research & Innovation Institute (SRII) located in Silicon Valley, California. SRII mission is to "Drive Digital Economy Innovation for a better World". SRII members include key leaders from industry, academia, research, startups and government organizations from around the world. SRII provides advisory and consulting services to major organizations on the subject of "innovating digital economy for major sectors of global economy".

Kris has been a senior leader in the Silicon Valley for more than 30 years and has worked with major IT companies such as IBM Research, Intel, AMD and National Semiconductor. His key areas of expertise include Semiconductor product & technology, Computing platforms & applications, Data Center technologies, Digital Solutions & Services for major sectors of economy and building/leading large cross functional global organizations.

Kris has also been working closely with academia to help drive "Innovation in Education & Entrepreneurship". Currently he is also a distinguished visiting professor at Tsinghua University in China and has been an Industry Fellow in the College of Engineering at UC Berkeley and an adjunct professor in the Electrical Engineering & Computer Science department at Santa Clara University, California.

Kris is on the board and advisory member of several startup companies and is a regular speaker at major conferences and summits around the world.

Oct. 29 10:50—11:50 AM

Keynote 5

Room:Lecture Hall, 2/F

Digital Wellness and Digital Addiction: Responsibility by Design

Prof. Raian Ali (Bournemouth University)



Abstract: There is growing evidence that digital media usage can become problematic and 'addictive'. Much research has focused on the role of user personal and social context in developing the problem, and little is known around the role of technology design in triggering and exacerbating the issue.

Digital media are equipped with powerful influence and persuasion techniques, which can increase users' engagement and retention but at the same time, can be questioned for hurting users' wellness. At the same time, technology offers an unprecedented opportunity for tools around assisting behavioural change and promoting a more regulated usage style. It can be designed to capture data around digital behaviour and use them to derive interactive intervention techniques and issue them intelligently.

Challenges and risks in designing such tools are paramount, mainly due to the nature of people with problematic behaviour, e.g. denial, trivialisation of the issues, the flight into health and relapse, and also due to the conflicting agendas and priorities in the tech industry. This keynote will summarise the research around the topic and argue the case for Responsibility by Design concept in which tech companies are asked to empower users and their surrogate parties (social or technical) with data and tools to regulate their digital usage and be meaningfully informed about it. The speaker will present recent projects in the gambling and social media domains, conducted closely with charities and tech industry in UK and Europe, and the policy change achieved through them.

Short Bio: Raian is a professor in Computing at Bournemouth University, UK. He founded and is leading the Engineering and Social Informatics Research Group (ESOTICS), in which the focus is on the inter-relation between technology and social requirements such as motivation, transparency and wellbeing. Raian is leading several projects around making digital media and online gaming and gambling fairer through data-driven real-time transparency to empower users, support the conscious and regulated nature of their usage and increase digital wellness. He frequently provides consultancy and policy advice, nationally and internationally, around the theme. He published over 90 peer-reviewed papers and many are of interdisciplinary nature that embraces elements from software engineering, psychology and marketing.

Special Session

2019/10/28 13:30-15:10

Invited Talk

Room: Meeting Room #2, B1

Big Data in Computational Social Psychology: Theoretical and Methodological Issues

Lin Qiu (Nanyang Technological University)



Talk Abstract: Big data presents unprecedented opportunities to understand human behavior on a large scale. It has been increasingly used in social psychological research to reveal individual differences and group dynamics. There are a few theoretical and methodological challenges in big data research that require attention. In this talk, I will highlight four issues, namely data-driven versus theory-driven approaches, measurement validity, multi-level longitudinal analysis, and data integration. They represent common problems that social psychologists often face in using big data. We present examples of these problems and propose possible solutions.

Talk Abstract: Lin Qiu is an Associate Professor in Psychology at Nanyang Technological University. He received his Ph.D. from Northwestern University. His research interests include Social Psychology, Cyberpsychology, and Computational Social Sciences. His work has appeared in top-tier journals including *Psychological Science*, *Personality and Social Psychology Bulletin*, *Journal of Research in Personality*, *Computers in Human Behavior*, *Journal of Computational Social Science*, and *Cyberpsychology, Behavior, and Social Networking*. He is Associate Editor of *Journal of Computational Social Science* and Associate Editor of *Asian Journal of Social Psychology*.

2019/10/29 10:50-12:10

Invited Talk

Room: Meeting Room #5, B1

Who are "We" in Big Data Era

Xiao-peng Ren (Chinese Academy of Sciences)



Talk Abstract: Billions of people worldwide now have profiles on on-line social network sites (OSNs). OSNs have been integrating into the milieu of modern-day social interaction and networking. What we can learn from OSNs? There're two competitive hypotheses about the relationship between OSNs profiles and owners' psychological orientations: idealized virtual-identity hypothesis vs extended real-life hypothesis. Here using Sina Weibo profiles, we explored these two hypotheses. Over 10 million Sina Weibo owner' nicknames were analyzed at provincial level who registered in 31 provinces. At first, new scale which includes four indicators such as percentage of English names and percentage of nicknames over 5 characters and percentage of nicknames over 10 characters and percentage of full Chinese characters(reversed) are constructed. Then it was found that there're measurable uniqueness differences. Further analysis showed these differences have ecological validity which could be explained by climate-economic theory. It lends support to extended real-life hypothesis. OSNs might be an efficient medium for expressing and communicating their real psychological orientation, which may help explain their popularity.

Talk Abstract: Xiao-peng Ren is associate professor of Institute of Psychology, Chinese Academy of Sciences. He obtained B.S. in Medicine from Jining Medical College of China in 1995, and took his Ph.D in applied psychology from Central Southern University (China) in 2001. After two-year Postdoctoral fellowship in Institute of Psychology, Chinese Academy of Sciences, He joined in Institute of Psychology, Chinese Academy of Sciences as an assistant professor. His research spans from cultural psychology and social psychology topics: (1) first name and its psychological outcomes; (2) socio-ecological factor and individualism/collectivism; (3) regional variations within China and its antecedents. He has published over 40 papers in SCI /SSCI /CSCD journals such as *Social Psychology and Personality Science*, *Frontiers in Psychology*, *Culture and Brain*, *Journal of Happiness Studies*, *Journal of Cross-Cultural Psychology*, *Journal of Organizational Behavior* and so on.

2019/10/29 13:30-14:50

Invited Talk

Room: Meeting Room #5, B1

Expressions of Emotion in Social Media: A Big Data Approach

Pan Liu (Hunan University)



Talk Abstract: With the fast development of technology during the past decades, social media have become increasingly important for people to share life and express themselves. In this study, using data from 13,789 Facebook users across U.S. states, we examined the main effects of cultural tightness-looseness and its interaction effects with individuals' social network density on their emotional expressions in social media. Results showed that individuals from culturally tight (vs. loose) states tended to more frequently express positive emotions and less often express negative emotions. Meanwhile, in culturally tight states, individuals with dense (vs. sparse) networks were more likely to express positive emotions, whereas this pattern was reversed in culturally loose states. However, no such phenomenon was observed for negative emotional expression. Our findings highlight the roles of cultural norms and social network structure in individuals' online emotional expressions and provide insights for researchers and practitioners to make better use of big data from social media in decoding human beings' daily life activities.

Talk Abstract: Pan Liu is Associate Professor (and Yuelu Scholar) at the School of Public Administration, Hunan University, Changsha, China. He received his Bachelor and Master degrees both from Peking University in 2007 and 2010, respectively, and got his Ph.D. degree from Nanyang Technological University, Singapore in 2015. Dr. Liu's research interests include emotion and well-being, social media and big data, and cross-cultural differences. His research findings have been published in peer-reviewed journals such as *Personality and Social Psychology Bulletin*, *Cyberpsychology, Behavior, and Social Networking*, *Analyses of Social Issues and Public Policy*, *Cognition*, *Vision Research*, etc.

Program at a Glance

Time	Contents
Date: October 28, 2019(Monday)	
8:00	Registration
8:20-8:30	Conference Opening
8:30-9:30	Keynote 1: Prof. George Giannopoulos, Academician of the Athens Academy
9:30-10:30	Keynote 2: Prof. Edwin Hancock, The University of York
10:30-10:50	Coffee Break
10:50-12:10	Parallel Sessions: 3 Sessions (Session 1, 2, 3)
12:30-13:30	Lunch
13:30-15:10	Special Session on Computational Social Psychology (SS 4-1) Special Session on Information Systems and Security (SS 5-1) Special Session on Artificial Intelligence in Education (SS 6-1)
15:10-15:30	Coffee Break
15:30-16:50	Special Session on Computational Social Psychology (SS 4-2) Special Session on Information Systems and Security (SS 5-2) Special Session on Artificial Intelligence in Education (SS 6-2)
18:30	Welcome Reception Venue: HongGuoYuan Hotel, Dining Hall
Date: October 29, 2019(Tuesday)	
8:00	Registration
8:30-9:30	Keynote 3: Prof. Chunhua Shen, The University of Adelaide
9:30-10:30	Keynote 4: Keynote 4: Dr. Kris Singh, SRIL
10:30-10:50	Coffee Break
10:50-11:50	Keynote 5: Prof. Raian Ali, Bournemouth University
10:50-12:10	Special Session on Computational Social Psychology (SS 4-3)
12:30-13:30	Lunch
13:30-14:50	Parallel Sessions: 2 Sessions (Session 7, 8) Special Session on Computational Social Psychology (SS 4-4)
14:50-15:10	Coffee Break
15:10-18:30	Excursion
18:30-21:30	Conference Banquet Venue: Grand Skylight Hotel

Date: October 30, 2019(Wednesday)	
8:00	Registration
8:30-9:50	Parallel Sessions 2 Sessions (Session 9, 10)
9:50-10:50	Parallel Sessions 3 Sessions (Session 11, 12, 13)
10:50-11:00	Coffee Break
11:00-12:30	Parallel Sessions 3 Sessions (Session 14, 15, 16)
12:30-13:30	Lunch
13:30-15:50	Special Session on Intelligent Transportation Systems (SS17)
15:50-16:00	Conference Closing

Technical Program

Day One: 2019/10/28		
2019/10/28 8:20—8:30		Room: Lecture Hall, 2/F
Conference Opening		
2019/10/28 8:30—9:30	Keynote 1	Room: Lecture Hall, 2/F
Chair: Prof. Guandong Xu, University Technology of Sydney		
Speaker: Prof. George Giannopoulos, Greek National Academy of Sciences		
Title: Socio-economic impacts of Future IT applications in Transport		
2019/10/28 9:30—10:30	Keynote 2	Room: Lecture Hall, 2/F
Chair: Prof. Congyan Lang, Beijing Jiaotong University		
Speaker: Prof. Edwin Hancock, The University of York		
Title: Network Econo-physics for Financial Market Analysis		
2019/10/28 10:50—12:10	Session 1	Room: Meeting Room #2, B1
Chair: Baopeng Zhang		
Object-based Image Discrimination Relationship Recognition By Yan Li, Baopeng Zhang, Jiajie Tian, Rui Li, Zhu Teng and Jianping Fan		
Learning Structural Similarity with Evolutionary-GAN: A New Face De-identification Method By Juan Song, Yi Jin, Yidong Li and Congyan Lang		
Sparse Multi-Graph Ranking towards Social Image Retrieval By Kai Liu, Tianjiao Wang, Jun Wu and Yidong Li(short)		
2019/10/28 10:50—12:10	Session 2	Room: Meeting Room #3, B1
Chair: Ke Ji		
Actively Semi-Supervised Collaborative Filtering By Wei Cui and Jun Wu		
An Item Recommendation Approach by Fusing Images based on Neural Networks By Weibin Lin, Lin Li and Dong Li(short)		
Personalized Recommendation Method of POI Based on Deep Neural Network By Yuan Gao, Zhizhou Duan, Weifeng Shi, Jun Feng and Yao-Yi Chiang		

2019/10/28 10:50—12:10	Session 3	Room: Meeting Room #5, B1
Chair: Lin Li		
User Behavior Credibility Evaluation Model Based on AHP and Rough Set and Game Theory By Haidong Cui, Zheng Feng and Dongfang Ma		
Identification of epileptic discharge based on statistical analysis and fractal analysis By Qiong Li, Ziwen Zhang, Qi Huang, Yuan Wu and Jianbo Gao(short)		
Effect of Doctor's Reputation on Patient Appointment in Online Health Communities By Qiuju Yin, Yijie Wang, Guofeng Zhan and Lun Li		
2019/10/28 13:30—15:10	Special Session 4-1	Room: Meeting Room #2, B1
Chair: Hao Chen		
Invited Talk: Big Data in Computational Social Psychology: Theoretical and Methodological Issues By Lin Qiu, Nanyang Technological University		
Twitter Analysis for Depression on Social Networks Using Natural Language Processing Techniques By Xiaohui Tao, Ravi Dharmalingam, Ji Zhang, Xujuan Zhou, Lin Li and Raj Gururajan		
2019/10/28 13:30—15:10	Special Session 5-1	Room: Meeting Room #5, B1
Chair: Qiuju Yin		
A New Signcryption Scheme without Hash or Redundant functions By Cui, Hu, Jia and Wang		
The Dynamic Factors of Guangdong's Economic Growth from the Perspective of Supply-side Reform By Ziyu Xu and Jin Wu		
Computer-based Large-scale Construction Project Health Diagnosis System By Hui Tang, Wei Shi, Haiyan Xu, Chunwei Yang, Yi Guo and Lin Sheng		
The Multi-product Newsvendor Problem: Review and Extensions By Mengting Mu, Junlin Chen, Yu Yang and Jian Guo		
A Comparative Analysis of the Characteristics of International Entrepreneurship in Emerging Economies By Jin Wu, Ziyu Xu and Linze Wu.		
2019/10/28 13:30—15:10	Special Session 6-1	Room: Room: Meeting Room #3, B1
Chair: Shiro Uesugi		
AI-Tutor: Generating Tailored Remedial Questions and Answers Based on Cognitive Diagnostic Assessment By Wenbin Gan, Yuan Sun, Shiwei Ye, Ye Fan and Yi Sun		
Entropy-Based Model Selection Using Monte Carlo Method By Masaki Satoh and Takao Miura		

Technical Program

Word Sense Guessing: A Knowledge Graph based Approach By Min Gu		
Technologies of Production with Society 5.0 By Keishi Matsuda, Shiro Uesugi, Kazuaki Naruse and Masahiro Morita		
2019/10/28 15:30—16:50	Special Session 4-2	Room: Meeting Room #2, B1
Chair: Hao Chen		
How Patent Protection Policies and Collectivism Culture Together Impact National Innovation? By Ting Xue and Yantong Di		
Research on Social Network Inference Method Based on Observation Data By Hailiang Chen, Bin Chen, Jian Dong and Lingnan He		
The Social Media Ecology of Guangdong-Hong Kong-Macao Greater Bay Area based on Big Data Method By Kangfu Liu		
2019/10/28 15:30—16:50	Special Session 5-2	Room: Meeting Room #5, B1
Chair: Qiuju Yin		
Comparative study of Bitcoin price prediction using WaveNets, Recurrent Neural Networks and other Machine Learning Methods By Leonardo Felizardo, Roberth Oliveira, Emilio Del-Moral-Hernandez and Fabio Cozman		
Research on the Influence of Distributed Accounting Technology on Accounting By Yuan Zhang, Hai Liu, Jie Luo, Cao Zheng and Sijia Wang		
The Importance of Data Assets and Its Accounting Confirmation and Measurement Methods By Yuan Zhang, Yuanxin Huang, Dingqing Zhang and Yuxiao Qian		
Big Data Analysis of Financial Risk and Avoidance Strategy--Based on Futures Industry By Yuan Zhang, Cao Zheng, Yutong Zhang, Murong Zheng, Xinyi Lin and Sijia Wang		
2019/10/28 15:30—16:50	Special Session 6-2	Room: Meeting Room #3, B1
Chair: Shiro Uesugi		
The Innovative Education of "Smart Finance" under the Promotion of Educational Informationization By Yuan Zhang, Yi Wu, Murong Zheng, Xinyi Lin and Yutong Zhang		
Research progress and Application of Behavior Tree Technology By Ruifeng Liu, Jiasheng Wang, Haolong Zhang and Mengfan Tian		
Social Transparency in Enterprise Information Systems: Peculiarities and Assessment Factors By Tahani Alsaedi, Angelos Stefanidis, Keith Phalp and Raian Ali		

Day Two: 2019/10/29		
2019/10/29 8:30—9:30	Keynote 3	Room: Lecture Hall, 2/F
Chair: Prof. Yidong Li, Beijing Jiaotong University		
Speaker: Prof. Chunhua Shen, The University of Adelaide		
Title: Real-time Instance Recognition Made Simpler		
2019/10/29 9:30—10:30	Keynote 4	Room: Lecture Hall, 2/F
Chair: Prof. Yidong Li, Beijing Jiaotong University		
Speaker: Dr. Kris Singh, SRII		
Title: The Global Digital Economy: Opportunities & Challenges		
2019/10/29 10:50—11:50	Keynote 5	Room: Lecture Hall, 2/F
Chair: Prof. Xiaohui Tao, University of Southern Queensland		
Speaker: Prof. Raian Ali, Bournemouth University		
Title: Digital Wellness and Digital Addiction: Responsibility by Design		
2019/10/29 10:50—12:10	Special Session 4-3	Room: Meeting Room #5, B1
Chair: Lingnan He		
Invited Talk: Who are "We" in Big Data Era By Xiaopeng Ren, Chinese Academy of Sciences		
Content Characteristics and Transmission Strategies of Social Media Rumors in China: Big Data Analysis of WeChat Rumors By Lingnan He, Jing Gu, Dan Li and Kaisheng Lai		
2019/10/29 13:30—14:50	Special Session 4-4	Room: Meeting Room #5, B1
Chair: Lingnan He		
Invited Talk: Expressions of emotion and well-being in social media: A big data approach By Pan Liu, Hunan University		
The Social Mentality of Netizens in the Guangdong-Hong Kong-Macao Greater Bay Area: Big Data Monitoring of Social Media By Zhongxuan Lin, Lingnan He and Kaisheng Lai		

Technical Program

2019/10/29 13:30—14:50	Session 7	Room: Meeting Room #2, B1
Chair: Wenhua Liu		
A Case Study of Predicting Banking Customers Behaviour Using Data Mining By Xujuan Zhou, Ghazal Bargshady, Moloud Abdar, Xiaohui Tao, Raj Gururajan and Ka C Chan		
Research and Analysis of User Behavior Fingerprint on Security Situational Awareness Based on DNS Log By Jia Zhuosheng(short)		
Procrastination on Social Networks: Types and Triggers By Abdulaziz Alblwi, Angelos Stefanidis, Keith Phalp and Raian Ali.		
Evaluating Connection Quality between Two Individuals in Social Networks By Yi Chen, Longkun Guo and Peihuang Huang		
2019/10/29 13:30—14:50	Session 8	Room: Meeting Room #3, B1
Chair: Yi Sun		
Deterministic Consensus Protocols By Buti Sello, Xiaohui Tao and Jianming Yong (short)		
Protecting Privacy in Digital Era on Cloud Architecture for Banking and Financial Services Industry By Abhishek Mahalle, Jianming Yong and Xiaohui Tao (short)		
UHF RFID Information Security Transmission Technology and Application Based on Domestic Cryptographic Algorithm By Mengfan Tian, Junpeng Qi and Rui Ma (short)		
Kubestorage: A Cloud Native Storage Engine for Massive Small Files By Fuxin Liu, Jingwei Li, Yihong Wang and Lin Li (short)		

Day Three:2019/10/30		
2019/10/30 8:30—9:50	Session 9	Room:Meeting Room #5, B1
Chair: Yigang Cen		
3D-Mask-GAN: Unsupervised Single-View 3D Object Reconstruction By Qun Wan, Yidong Li, Haidong Cui and Zheng Feng (short)		
Multi-attribute Data Visualization Analysis Model for Multimedia By Jun Wu(short)		
Vehicle Detection in Distorted Driving Video Based on Metric Learning and Single Shot MultiBox Detector By Zhang Fanghui, Jin Yi, Kan Shichao, Zhang Linna, Cen Yigang and Wen Jin		
Makeup based on segmentation and local transfer By Yuanhan Zhang, Haidong Cui, Yidong Li and Feng Zheng (short)		
2019/10/30 8:30—9:50	Session 10	Room:Meeting Room #2, B1
Chair: Jun Wu		
WeaGAN: Generative Adversarial Network for Weather Translation of Image among Multi-domain By Yating Lin, Yidong Li, Haidong Cui and Zheng Feng (short)		
Sentence-Level Sign Language Recognition Using RF signals By Xianjia Meng, Lin Feng, Xiao Yin, Huanting Zhou, Chang Sheng, Chongyang Wang, Anxun Du and Linzhi Xu		
Domain-Camera Adaptation for Unsupervised Person Re-Identification By Jiajie Tian, Zhu Teng, Yan Li, Rui Li, Baopeng Zhang and Jianping Fan (short)		
2019/10/30 9:50—10:50	Session 11	Room:Meeting Room #3, B1
Chair: Shiro Uesugi		
Prediction and Analysis of Rumour's Impact on Social Media By Jun Yin, Shaowu Liu, Guandong Xu and Qian Li		
How do the personality traits affect observational behaviors when judging whether smiles are genuine or not? By Kuangzhe Xu, Toshihiko Matsuka and Hiyori Tagam		
2019/10/30 9:50—10:50	Session 12	Room: Meeting Room #2, B1
Chair: Xiaohui Tao		
The hypergraph matching based on CCRP By Jun Zhou, Tao Wang and Yi Jin (short)		

Technical Program

TPM: A GPS-based Trajectory Pattern Mining System By Yang Cao, Jingling Yuan, Song Xiao and Qing Xie (short)		
Efficient Semantic Enrichment Process for Human Trajectories in Surveillance Videos By Fangzhou Bao, Xiaoyu Sun, Weilan Luo, Xintao Liu, Genlin Ji and Bin Zhao (short)		
2019/10/30 9:50—10:50	Session 13	Room: Meeting Room #5, B1
Chair: Ding Ding		
The Effect of Urbanization Quality on Resident Consumption in China By Miao Wei, Xiqin Hu, Wenwen Qin and Kai Xu (short)		
An Integration Method of Classifiers for Abnormal Phone Detection By Yahan Yuan, Ke Ji, Runyuan Sun, Kun Ma and Zhenxiang Chen (short)		
Fear of Missing Out (FoMO) as Really Lived: Five Classifications and one Ecology By Aarif Alutaybi, John Mcalaney, Emily Arden-Close, Angelos Stefanidis, Keith Phalp and Raian Ali (short)		
2019/10/30 11:00—12:30	Session 14	Room: Meeting Room #2, B1
Chair: Yi Sun		
Combining Q&A Pair Quality and Question Relevance Features on Community-based Question Retrieval By Dong Li and Lin Li (short)		
An Extraction-Abstraction Hybrid Approach for Long Document Summarization By Si Huang, Rui Wang, Qing Xie, Lin Li and Yongjian Liu		
The Effect of Online Reviews on E-book Pricing: A Text Analytics Approach By Kang Li, Lunchuan Zhang, Wei Xu, Dinglu Pan and Wenping Zhang		
2019/10/30 11:00—12:30	Session 15	Room: Meeting Room #5, B1
Chair: Zhu Teng		
Micro-blog User Profiling: A Supervised Clustering based Approach for Age and Gender Classification By Jing Qiu, Lin Li and Yunpei Zheng (short)		
Dynamic evolution of sentiments in Never Let Me Go: insights from quantitative analysis and implications By Qiyue Hu, Bin Liu, Mads Thomsen, Jianbo Gao and Kristoffer Nielbo		
Deep neural network-based classification model for Sentiment Analysis By Donghang Pan, Jingling Yuan, Lin Li and Deming Sheng		

2019/10/30 11:00—12:30	Session 16	Room: Meeting Room #3, B1
Chair: Jun Wu		
Adaptive Multi-Threshold Energy-Aware Virtual Machine Consolidation in Cloud Data Center By Yingyue Hu, Ding Ding, Kaixuan Kang and Tingting Li		
Improved Biclustering Algorithm Based on Weighted Mean Square Residual By Wenhua Liu, Yaxin Hou, Yidong Li and Hongwei Zhao (short)		
Improved GA for QoS Satisfaction Degree Optimal Web Service Composition Selection By Minghua Chen, Qingjun Wang, Wei Sun, Xiaoying Song and Na Chu		
2019/10/30 13:30—15:50	Session 17	Room: Meeting Room #5, B1
Session 17: Special Session on Intelligent Transportation Systems		
Chair: Yidong Li		
Electricity Price Forecast using Meteorology data: a study in Australian Energy Market By Ming Zhao, Yangyang Shu, Shaowu Liu and Guandong Xu		
Research on Train Formation Plan Optimization in Railway Network Based on Branch-and-Price Algorithm By Wei Xiao, Yixiang Yue and Feng Chen		
Research on the Optimization of Train-set Rostering Plan of Intercity Railway By Linchai Zhou and Yixiang Yue		
Corruption and innovation-performance under the background of transition in China By Qibo Jiang and Qingmei Tan		
Single Image Dehazing Algorithm Based on Sky Segmentation By Yuan Tang, Teng Huang and Chuanming Song		
An Efficient Location Privacy Preserving Model based on Geohash By Wei Xiang		
2019/10/30 15:50—16:00		
Conference Closing		

Conference Information

Conference Venue

BESC 2019 will be held in the campus of Beijing Jiaotong University (BJTU), China. The conference venue is International Conference Center of BJTU, which is connected to the Mechanical Engineering Building. BJTU is a national key university under the direct administration of the Ministry of Education and now is jointly supported by the Ministry of Education, the China Railway Corporation and Beijing Municipal Government. BJTU is one of the first universities selected into the “National 211 Project” and the “985 Innovative Platforms for Key Disciplines Project”, one of the first institutions authorized to confer Master’s and Doctoral degrees. The campus of BJTU covers an area of nearly 67 hectares.



Venue Address

International Conference Center, Beijing Jiaotong University
Address: No.3 Shangyuancun, Haidian District, Beijing, China
Phone: +86 10 51684931

Way to reach Beijing Jiaotong University from Beijing Capital International Airport

Airport Shuttle

- 1) Take the Airport Shuttle Line #4 (a.k.a. Gong-Zhu-Fen Line) at Terminal 1, 2 or 3 and get off at Bei-Tai-Ping-Zhuang Station;
- 2) Transfer to City Bus #16 (30 meters walking), get on at Bei-Tai-Ping-Qiao-Xi station and get off at Beijing Jiaotong University Station. Duration is about 100 minutes, and fare is 27 RMB. For more information on Airport Shuttle, please visit the airport website.

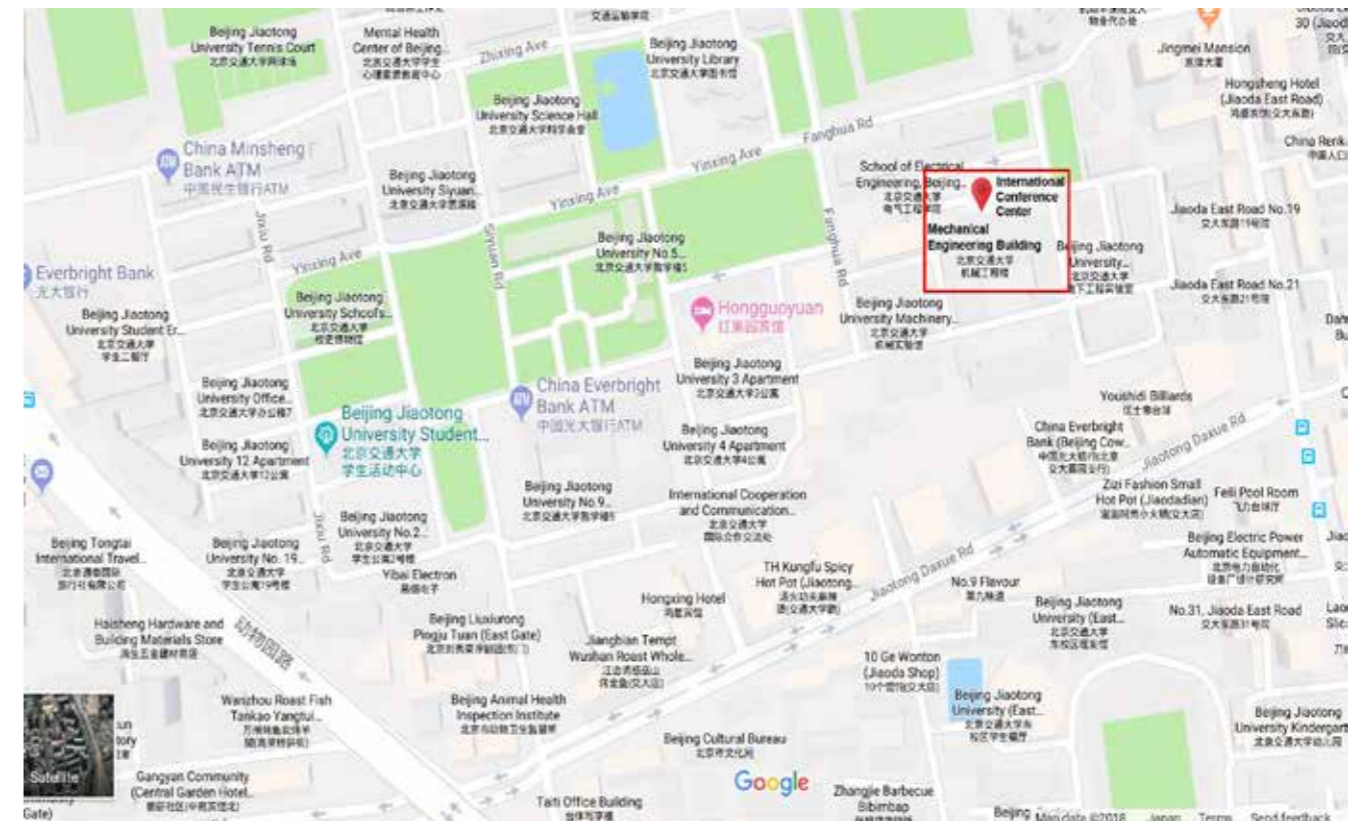
Subway

- 1) Take the Airport Express Railway at Terminal 2 or 3 and get off at Dong-Zhi-Men Station;
- 2) Transfer to Subway #2 (510 meters walking), get on at Dong-Zhi-Men Station and get off at Xi-Zhi-Men Station;
- 3) Transfer to City Bus #16 or #26 (630 meters walking), get on at Di-Tie-Xi-Zhi-Men Station and get off at Bei-Xia-Guan Station, with 90 meters walking to Beijing Jiaotong University. Duration is about 90 minutes, and fare is 31 RMB. For more information on Beijing subway, please visit the subway website.

Taxi

Take a taxi at Terminal 1, 2 or 3. Duration is about 50 minutes, and fare is about 120 RMB.

Beijing Jiaotong University Main Campus Map



Registration

The registration desk will open on the foyer of conference venue (International Conference Center, Beijing Jiaotong University) as follows:

- | | |
|--------------------------|-----------------|
| * Wednesday, November 14 | 7:30am – 6:00pm |
| * Thursday, November 15 | 8:00am – 6:00pm |
| * Friday, November 16 | 8:00am – 6:00pm |

Pre-registrants can pick up a registration kit there. The conference registration kit includes a conference bag, program booklet, a copy of digital proceedings, name badge, coupons for lunches, reception and banquet. All attendees must wear their name badges at all times to gain admission to all conference sessions, and to the reception, lunch and banquet. Tutorial & Workshop fee includes one lunch, refreshment break, and program booklet.

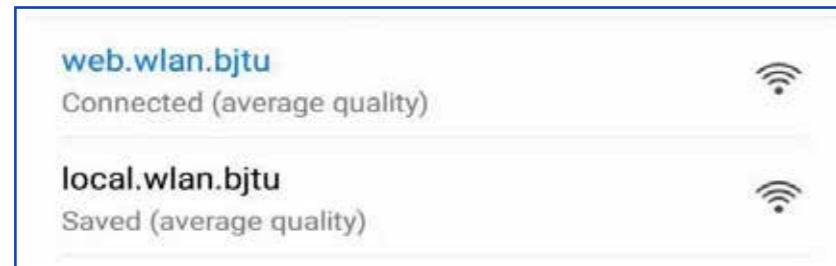
Conference Information

Directions for connecting to Wi-Fi

You can connect to Wi-Fi by the following steps:

1. Search and connect Wi-Fi named **web.wlan.bjtu** or **local.wlan.bjtu**.

You can connect to the Internet by either link.



2. Then the default browser will automatically open the online login page.

If you connect the **web.wlan.bjtu** you will see the web page as shown below:



If you connect the **local.wlan.bjtu** you will see the web page like this:



BESC 2019

