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Part I Conference Schedule

Time: October 26- 28, 2019
Location: Grand Link Hotel (桂林桂山华星酒店), China

Date	Time	Lobby	
Oct. 26	**14:00-17:00**	**Registration**	
Date	**Time**	**Conference Room 4 [象山厅] 2nd Floor**	**Conference Room 5 [叠彩厅] 2nd Floor**
Oct. 27	**08:30-12:00**	**Management Service & Education Sciences** **Keynote Speech Session I** **Chair: Dr. Simon Burfoot** **Group photo & Coffee Break: 10:45-10:55**	**Computer Science & Communications** **Keynote Speech Session I** **Chair: Prof. P. Takis Mathiopoulos** **Group photo & Coffee Break: 10:45-10:55**
	12:00-13:30	**Lunch** Whisper Garden Lounge [叮咛吧] Lobby	
Date	**Time**	**Conference Room 4 [象山厅] 2nd Floor**	**Conference Room 5 [叠彩厅] 2nd Floor**
Oct. 27	**14:00-18:00**	**Management Service & Education Sciences** **Keynote Speech Session II** **&** **Technical Session** **Chair: Dr. Simon Burfoot** **Group photo & Coffee Break: 15:30-15:40**	**Computer Science & Communications** **Keynote Speech Session II** **&** **Technical Session** **Chair: Prof. Dai Wanyang** **Group photo & Coffee Break: 15:30-15:40**
	18:00-19:30	**Dinner** Whisper Garden Lounge [叮咛吧] Lobby	
Oct. 28	**07:00-17:30**	**One Day Tour (Pending, on own expense)**	

Part II Keynote Speeches

Management Service & Education Sciences: Keynote Speech Session I

Keynote Speech 1: Job satisfaction and job engagement: Empirical evidence from food safety regulators in Guangdong, China

Speaker: Prof. Xiaowei Wen, South China Agricultural University, China
Time: 08:30-09:15, Sunday Morning, October 27, 2019
Location: Conference Room 4[象山厅], 2nd Floor, Grand Link Hotel

Abstract
Food safety incidents continue to be reported frequently in China. Chinese food safety regulators are challenged with extensive regulatory tasks and increasing pressure from all parties. These regulators need to be recognized as the key factor affecting the regulation of food safety by the Chinese administration. Therefore, this research explores the internal mechanisms of food safety regulator job satisfaction and job engagement, applying a structural equation model. Survey data were collected from 1022 food safety regulators of Guangdong, China for analysis. The results indicate that the degree of job satisfaction and job engagement of food safety regulators in Guangdong was at an intermediate level.
Compared with their satisfaction with organizational environment and organizational management, their satisfaction with their work characteristics is the important factor influencing job engagement. To strengthen food safety human resource management, a promotion mechanism and salary system for regulators should be improved in the future. In addition, regulatory enforcement conditions and environments should be optimized in order to enhance regulators' job satisfaction and engagement, thereby, ultimately improving the supervisory level of Chinese food safety control.

Keynote Speech 2: The Power of Peer Learning: Rethinking the Preschool Music Learning Center

Speaker: Prof. Meiying Liao, Minghsin University of Science & Technology, Chinese Taipei
Time: 09:15-10:00, Sunday Morning, October 27, 2019
Location: Conference Room 4[象山厅], 2nd Floor, Grand Link Hotel

Abstract
Children are natural artists. Every human being is born with a certain level of

musical potential. Music educators believe that children have capability to learn music without adult supervision through developmentally appropriate play. However, a teacher can raise the level at which children learn. A music learning center not only provides a child-centered learning experience that cultivates respect for individual differences but also provides a customized plan that is commensurate with a child's ability to learn, learning speed, and capacity for active learning. For any child, peer interactions through free play can greatly enhance motivation to learn, musical ability, and problem-solving ability. A music learning center is particularly effective in providing young children with both the opportunity to interact with musical media and a peer learning environment that uses games for the cultivation of their musical ability. This keynote will demonstrate how to establish a music learning center and design varied music activities. The current state of music learning centers in Taiwan, Australia, and the United States will also be examined. The key issue of how children learn through playing with their peers and the teacher's role in a music learning center will also be demonstrated and discussed through a video presentation.

Keynote Speech 3: Integrated Framework of Growth Management for Identification of Service Innovation Levels and Priorities

Speaker: Prof. Jingxiao Zhang, Chang'an University, China
Time: 10:00-10:45, Sunday Morning, October 27, 2019
Location: Conference Room 4[象山厅], 2nd Floor, Grand Link Hotel

Abstract
Growth management depends on an accurate understanding of an organizations' current situation within the market in which it operates. Literature indicates that there is still inefficiency in quantitatively diagnosing the driving factors of service innovation and growth management. The purpose of this research is to identify the levels and priorities of sustainable growth management strategies with detailed measurements for industrial service innovation. The research focuses on the construction industry as the case context to scrutinize and compare various indexes and policy platforms for the evaluation of service innovation and the development of a diagnostic framework. The paper further identified the developmental obstacles of service innovation from 585 survey responses from construction enterprise representatives from Shanghai, Beijing and Xi'an in China, using average score method and entropy weight method. The data analysis identified the service innovation level and development priorities for the enterprises can assist in determining sustainable service innovation paths. The research then combined the competitive advantage characteristics method using a cluster analysis to develop a growth management framework of service innovation in the construction industry. The research results indicated that the majority of analyzed enterprises were in the second phase of their development, with clear policy opportunities for increasing levels of service innovation. However, the results also indicate the majority of sample enterprises were not encouraging the efforts of employees to strive for innovation and were lacking appropriate investment funding towards service-related innovation. These two weaker aspects offer a starting

point for firm-level managers to consider when aiming to improving service innovation. The paper contributes by advancing the quantitative evaluation of growth management policies for service innovation. Furthermore, it provides possible measures for improving service innovation with particular emphasis on service innovation in project-based construction enterprises. Finally, it offers a practical diagnostic tool to improve industry level growth via increased service innovation.

Keynote Speech 4: A multi-dimensional investigation of English verb-noun collocations in tertiary level Chinese EFL learners

Speaker: Dr. Simon Burfoot, Lingnan University, Hong Kong (China)
Time: 10:55-11:40, Sunday Morning, October 27, 2019
Location: Conference Room 4[象山厅], 2nd Floor, Grand Link Hotel

Abstract
Collocations occur frequently in written and spoken discourse. Their appropriate selection and deployment contribute to fluent and accurate language use such that they are an important component of language competence. A multidimensional study investigated English high-frequency verb-noun collocation knowledge and use in a group of tertiary level Chinese learners of English. A paper-based test of productive collocation knowledge revealed low levels of knowledge various errors in recall. Rasch analysis of test results provided evidence of the psychological reality of collocations for these learners but suggested lexical and grammatical elements are stored separately. A computer-based reaction time adaptation of the test items showed reaction and assembly times significantly faster for known collocations than compositional responses and comparable to advanced and native English users. Analysis of temporal phonological features of spoken collocations showed no significant difference between collocations and compositional responses but faster onset times and lower probability of pauses within collocations. The findings have further implications for the study of collocations in learner discourse and their selection, teaching and learning in EFL settings.

Keynote Speech 5: Practice of STEAM in Montessori Teaching Education

Speaker: Dr. Leeching Wei, Nanya Institute of Technology University, Chinese Taipei
Time: 11:40-12:25, Sunday Morning, October 27, 2019
Location: Conference Room 4[象山厅], 2nd Floor, Grand Link Hotel

Abstract
This study is mainly aimed to explore the integration and practice of STEAM

in Montessori teaching. STEAM is an education concept includes Science, Technology, Engineering, Arts and Mathematics, while Montessori teaching emphasize on five main areas which involved practical life, sensorial, mathematics, language and culture education.
Montessori education are structural, scientific, mathematical, logical and consistent. STEAM education is innovative and diverse. Integrate STEAM into Montessori teaching, enable STEAM to become more structural and logical. On the other hand, incorporate Montessori teaching into STEAM enhancing teaching to be more innovative, freedom and diversity.

In this study, based on the data collection of practical teaching, observation of records, collection and analysis of teachers and students' teaching feedback, we found that children will be more creative and diverse through the learning that integrate Montessori teaching and the STEAM education. Moreover, this combination study provide children a more complete learning.

The findings and contributions of this study concluded five points:

1. Parents are able to use STEAM concept and Montessori education to guide children to learn at home.
2. Educators can clearly know how to use the concept of STEAM into the teaching of Montessori when design courses and select teaching materials.
3. A more in –depth understanding of the content of STEAM education and practical examples that can be refer to.
4. The results of this study can serve as a model for preschool education practicing.
5. This study uses STEAM education in the practice of preschool education and provides specific examples of teaching methods.

Management Service & Education Sciences: Keynote Speech Session II

Keynote Speech 6: The Alternative of Positive Multilingual Environments Through Translingualism in a Multicultural world

Speaker: Prof. Tungchiou Huang, Fo Guang University,Ph. D in National Centre for Language and Literacy, Chinese Taipei
Time: 14:00-14:45, Sunday Afternoon, October 27, 2019
Location: Conference Room 4[象山厅], 2nd Floor, Grand Link Hotel

Abstract
Translingualism is a process of empowerment, and this empowerment of us in our daily life might produce an environment that fosters maturity and responsibility (Steven G. Kellman 2000; Huang 2017). Diversity of race, language, culture, ethnicity, social class, and religion is a fundamental feature of interpersonal interactions and community structures. Life on earth is an encounter with the blending of culture and nature, as well as different languages and cultures, and such kind of the circumstances have forced everyone to learn from each other in order to form positive heterogenous relationships with people from various cultural

backgrounds.
The aim of this study is to indicate that the theme of translingualism is the notion of interdependence of languages and the transfer of the skills (Huang 2010, 2015, 2016). What I meant is that it is possible to for one everywhere to be able to speak several languages at a time. Speaking community languages well makes one lead a joyful life or more employable. To achieve this aim, I have been sharing in my experiences of being multilingual in a multilingual daily life by applying the approach of action research to learn several different languages at a time (Edwards & Ngwaru 2011; Jandt 2005; Lindholm 1994).
The phenomenological method was also been employed in my study, using natural and qualitative description just because phenomenological method makes possible "a descriptive account of the essential structures of the directly given." The result of this study must be of enormous value to most of the peoples who would like to become multilingual, for it indicates that being multilingual means cultivating eternal capacity for the language learning.

Keynote Speech 7: Driver-rider Cost-Sharing Strategies and Equilibria in a Ridesharing Program

Speaker: Prof. Xiaolei Wang, Tongji University, China
Time: 14:45-15:30, Sunday Afternoon, October 27, 2019
Location: Conference Room 4[象山厅], 2nd Floor, Grand Link Hotel

Abstract
The rapid development of smartphone technology has led to the increased popularity of dynamic ridesharing apps used to organize ad hoc ridesharing trips between strangers at short notice. To support such real-time on-demand services, cost-sharing between drivers and riders is commonly centrally determined by ridesharing apps according to prescribed rules. To reveal the impacts of appropriate cost-sharing strategies on the success of ridesharing programs, we models the mode choices of a group of heterogeneous travelers with continuously distributed values of time in a single-corridor network, considering the complex interactions between travelers' mode choices and the attractiveness of ridesharing in terms of rider/driver waiting/detouring times and matching probabilities. The equilibrium state under any given cost-sharing strategy is described by a system of variational inequalities, based on which the existence of equilibria is established. With the proposed modeling framework, various cost-sharing strategies are examined to avoid mode shifts among transit users to autos and/or reduce vehicular traffic in the short run, and the necessary conditions for cost-sharing strategies to sustain participation and/or reduce vehicle usage are explicitly provided. It is shown that when driving alone is faster but more expensive than public transit, no cost-sharing strategy exists to sustain an active ridesharing platform without inducing transit users to join the ridesharing program. Moreover, the existence of cost-sharing strategies capable of reducing vehicular traffic on the road is not always guaranteed, depending on the costs of driving alone and taking public transit in the considered corridor, fuel prices, and travelers' prioritization of safety and privacy. Furthermore, it is found that

the initial state with no ridesharing participants is an equilibrium under any cost-sharing strategy if the additional cost incurred by a traveler through participating in a ridesharing program is non-negative. This explains the difficulty of initiating a ridesharing program and implies the initial necessity of subsidizing all intended riders and/or drivers to encourage participation.

Keynote Speech 8: Tertiary Educational Supply Chain Management

Speaker: Dr. Md.Mamun Habib, BRAC Business School (BBS), BRAC University, Bangladesh and University of Texas - Arlington (UTA), USA, Bangladesh
Time: 15:40-16:25, Sunday Afternoon, October 27, 2019
Location: Conference Room 4[象山厅], 2nd Floor, Grand Link Hotel

Abstract
This keynote paper would demonstrate Educational Supply Chain Management, as the application of SCM in the service industry, which would unlock other applications of SCM in different arenas. Integrated Tertiary Educational Supply Chain Management (ITESCM) model constructs were identified and confirmed by 493 respondents, representing experts and administrators, faculty, staffs of the university, employers, graduates, etc. The resulting model was subsequently evaluated for accuracy and validity by multiple linear regressions (MLR) analysis and the structural equation modeling (SEM) technique. The research model provides a novel approach for decision-makers of each supply chain components to review and appraise their performance toward fulfillment of ultimate goals i.e. producing high-caliber graduates and high-impact research outcomes, which represent two main contributions, for the betterment of the end customer, i.e., the society.

Computer Science & Communications: Keynote Speech Session I

Keynote Speech 1: The mobile quantum-cloud-computing based future internet with AI and Blockchain

Speaker: Prof. Dai Wanyang, Nanjing University, China
Time: 08:30-09:15, Sunday Morning, October 27, 2019
Location: Conference Room 5 [叠彩厅], 2nd Floor, Grand Link Hotel

Abstract
We model the hardware and software architecture for the future internet and generalized Internet of Things (IoT) by quantum cloud-computing and blockchain. To reduce the measurement error and increase the efficiency of quantum entanglement (i.e., the capability of fault tolerance) in the current quantum computers and quantum communications, we design a quantum-computing chip by modeling it as a multi-input multi-output (MIMO) quantum channel and obtain its channel capacity via our recently derived mutual information formula. To capture the internal qubit data flow dynamics of the channel, we model it via a deep convolutional neural network (DCNN) with generalized stochastic pooling in terms of resource-competition among different quantum eigenmodes or users. The pooling is corresponding to a resource allocation policy with two levels of competitions as in cognitive radio: the first one is on users' selection in a “win-lose" manner; the second one is on resource-sharing among selected users in a ``win-win" manner. The effectiveness of our policy is proved by diffusion modeling with theory and numerical examples.

Keynote Speech 2: On the SINR Statistics of VFDM Cognitive Spectrum Sharing Systems

Speaker: Prof. P. Takis Mathiopoulos, University of Athens, Greece
Time: 09:15-10:00, Sunday Morning, October 27, 2019
Location: Conference Room 5 [叠彩厅], 2nd Floor, Grand Link Hotel

Abstract
An analytical precise approximation of the SINR statistics of the two-tier Vandermonde-subspace frequency division multiplexing (VFDM) cognitive spectrum sharing systems over frequency-selective Rayleigh fading channels is presented. It is shown that the gamma distribution provides the best fitting accuracy and that its use leads to simple, yet accurate, closed-form expressions for evaluating the ergodic capacity (EC) and average bit error probability (ABEP) performance of such systems. In deriving these expressions,

the parameters of the gamma distribution have been obtained for various operating conditions of the considered VFDM system using distribution fitting. Furthermore, regression analysis has been used to obtain approximate analytical expressions for these parameters in relation to the system operating parameters. Performance evaluation results, obtained for various system implementations, including the standardized IEEE 802.11 and 3GPP LTE, are presented to demonstrate the validity of the proposed methodology. Its accuracy has been verified by means of computer simulations.

Keynote Speech 3: Visible light communication (LiFi): towards next generation green wireless communications

Speaker: Dr. Chen Chen, S Chongqing University, China
Time: 10:00-10:45, Sunday Morning, October 27, 2019
Location: Conference Room 5 [叠彩厅], 2nd Floor, Grand Link Hotel

Abstract
Illuminating white light-emitting diodes (LEDs)-enabled visible light communication (VLC), which is also known as LiFi, has attracted ever-increasing attention in recent years, due to the rapid development of solid-state lighting (SSL) technology. The LEDs in general VLC systems play a dual role of illumination and wireless communication. Compared with traditional radio frequency (RF)-based communication technologies such as WiFi, VLC is a green technology which enjoys many inherent advantages including license-free spectrum, high data rate, cost-effective front-ends, high security, electro-magnetic interference (EMI)-free operation, etc. Nevertheless, the development and deployment of high-speed and large-coverage VLC systems face many challenges, such as the small modulation bandwidth of commercially available off-the-shelf white LEDs, the limited coverage of each LED access point (i.e., optical attocell) and the inter-cell interference (ICI) in multi-cell VLC networks. This talk will first give a brief introduction about the emerging VLC technology and then several previous works we have done will be presented to address the challenges faced by current VLC systems.

Keynote Speech 4: Energy and Delay Management for Dynamic Offloading in Mobile-Edge Computing System with Energy Harvesting Devices and QoS Constraints

Speaker: Prof. Guanglin Zhang, Donghua University, China
Time: 10:55-11:40, Sunday Morning, October 27, 2019
Location: Conference Room 5 [叠彩厅], 2nd Floor, Grand Link Hotel

Abstract
Mobile-edge computing (MEC) has aroused significant attention for its performance to accelerate application's operation and enrich user's experience. It has evolved as a promising technology to alleviate the computing pressure of mobile devices by offloading computation tasks to MEC server. With the increasing development of green computing, energy harvesting (EH) is considered as an available technology to capture energy from circumambient environment to supply extra energy for mobile devices. Energy management is challenging since the unpredictability of the EH and the quality of service (QoS). We propose an online dynamic tasks assignment scheduling to investigate the tradeoff between energy consumption and execution delay for an MEC system with EH capability. We formulate it into an average weighted sum of energy consumption and execution delay minimization problem of mobile device with the stability of buffer queues and battery level as constraints. We obtain the optimal scheduling about the CPU-cycle frequencies of mobile device and transmit power for data transmission. Then, we investigate the problem of power consumption in a multiuser MEC system with EH devices. We design an online algorithm, which only uses current states of the mobile users and does not depend on the system statistic information. Furthermore, we propose a distributed algorithm based on the alternating direction method of multipliers to reduce the system computational complexity. We prove the optimality of the online algorithm and the distributed algorithm using rigorous theoretical analysis. The performance of the proposed online algorithm is validated with extensive trace-driven simulations.

Keynote Speech 5: Outdated channel state information: Theory and Practice

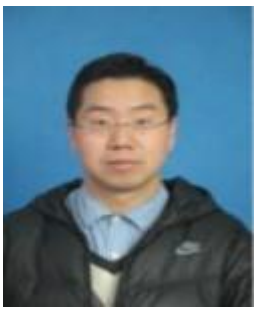
Speaker: Prof. Khoa N Le, School of Computing, Engineering, and Mathematics, Australia
Time: 11:40-12:25, Sunday Morning, October 27, 2019
Location: Conference Room 5 [叠彩厅], 2nd Floor, Grand Link Hotel

Abstract
The wireless communication landscape has continuously evolved and advanced at a rapid pace. Most existing works have been performed at a

higher level of the communication protocol, which gradually has widened the gap between the lower layers, and the upper layers. This work is consolidating the fundamentals of correlated fading, and offers insight into their possible practical applications, which include---but not limited to---wireless secrecy, modelling of outdated-channel-state-information (OCSI), and imperfect-CSI (ICSI) relay networks. Different models and scenarios will be discussed, which also includes line-of-sight fading, and its impact on future wireless communication networks.

Computer Science & Communications: Keynote Speech Session II

Keynote Speech 6: Classifying transportation mode and speed from trajectory data via deep multi-Scale learning



Speaker: Prof. Shaohua Wan, Zhongnan University of Economics and Law, Wuhan, China
Time: 14:00-14:45, Sunday Afternoon, October 27, 2019
Location: Conference Room 5 [叠彩厅], 2nd Floor, Grand Link Hotel

Abstract
With the rapid development of mobile Internet, the Internet of Things and other new technologies, mobile devices are generating massive amounts of spatio-temporal trajectory data. This paper aims to propose a method that can automatically classify transportation mode and speed, help people understand the mobility of moving objects, thus making people's life more convenient and traffic management easier.
Although there have been some studies on trajectory classification, yet they either require manual feature selection or fail to fully consider the impact of time and space on classification results. None of them can extract features automatically and comprehensively. Hence, we propose Deep Multi-Scale Learning Model and design a deep neural network to learn features under multi-scale time and space granularities automatically. The obtained features are fused to output final classification results. Our method is based on the latest image classification network structure DenseNet, and incorporates attention mechanism and residual learning. This model is able to fully capture spatial features so as to enhance feature propagation and capture long-term dependence. Moreover, the number of network structure parameters is also reduced. We have evaluated our Deep Multi-Scale Learning Model on two real datasets. The results show that our model is superior to the current state-of-the-art models in top-1 accuracy, recall and f1-score.
Furthermore, the classification results from our model can help to understand mobility accurately.

Keynote Speech 7: Enabling Schemes for Pervasive Radio Interface Technologies (ESPRIT): Recent Progress Made Under 5G and New Directions Paving the Way Towards 6G

Speaker: Prof. Sofiène Affes, EMT Centre, INRS,The Wireless Lab, Canada
Time: 14:45-15:30, Sunday Afternoon, October 27, 2019
Location: Conference Room 5 [叠彩厅], 2nd Floor, Grand Link Hotel

Abstract
In this keynote lecture, we will report on the significant progress made under the 5G label in the development of both 5G and B5G or 6G wireless access technologies in the framework of the major NSERC (Natural Sciences and Engineering Research Council of Canada) CRD (Collaborative R&D) Project with Huawei Canada on 5G-WAVES (wireless access virtualization enabling strategies for 5G). Among the numerous research themes and challenges successfully tackled within this pioneering initiative, we discuss 1) optimized progressive "grey-field" wireless access virtualization (WAV) deployment strategies; 2) new user-centric base-station (BS) WAV schemes; 3) novel QoS-based user equipment (UE) WAV approaches; and 4) efficient time and frequency synchronization for distributed MIMO-relay beamforming techniques. We will also discuss future directions paving the way towards 6G on i) advanced sub-TeraHertz-to-TeraHertz and free-space-optical (FSO) wireless transceivers and networks; and ii) intelligent and autonomous embedded systems with integration of sensing, mechatronics, connectivity, and control.

Part III Technical Sessions

Management Service & Education Sciences: Technical Session

Session Chair: Dr. Simon Burfoot, Lingnan University, Hong Kong (China)

Conference Room 4 [象山厅] 2nd Floor 14:00-18:00, Sunday Afternoon, October 27, 2019

ID	Paper Title	Author	Affiliation
Keynote 14:00-14:45	The Alternative of Positive Multilingual Environments Through Translingualism in a Multicultural world	Prof. Tungchiou Huang	Fo Guang University
Keynote 14:45-15:30	Driver-rider Cost-Sharing Strategies and Equilibria in a Ridesharing Program	Prof. Xiaolei Wang	Tongji University
15:30-15:40	**COFFEE BREAK**		
Keynote 15:40-16:25	Tertiary Educational Supply Chain Management	Dr. Md.Mamun Habib	BRAC Business School (BBS)
Oral	The Inspiration of The Eighteenth Camel: A Case Study on the Participation of Third-Party Organizations in Community Governance	Can Shen	Zhejiang Normal University
Oral	An Empirical Study on the Relationship Between Psychological Contract and Job Satisfaction of the Cenozioc Employees	Li Ma	University of Electronic Science and Technology
Oral	Effects of Oracy Building Instruction VIA Blended Learning Environment on Eil Students' Oracy Skills	Kusuma Bangkom	Chulalongkorn University
Oral	Discourse Factors Involved in Distribution of Null-Subject Phenomenon in Mandarin Chinese	Siqi Shi	Nanyang Junior College
Oral	Research on the Implementing Approaches of Courses Internationalization in Agriculture-related Universities	Yunfei Ma	Tianjin Agricultural University
Oral	Developing ESP Teaching Materials Based on the Analysis of Information Engineering Majors' Needs	Haiyun Gu	Shanghai Maritime University

Oral	C2F2C Strategy Development: The Sichuan Fanqing Furniture Industry Company Case Study*	Liang Zhong	University of Electronic Science and Technology of China, IBS-IU
Oral	Feasibility Analysis of Chinese NGOs Participating in Preschool Education	Feng Zou	Guangxi Normal University
Oral	Driving Forces of Industrial Water Pollutant Emission from Spatial-dynamic Perspective in China: Analysis Based on Kaya Equation and LMDI Decomposition	Maogang Tang	East China University of Science and Technology

Computer Science & Communications: Technical Session

Session Chair: Prof. Dai Wanyang, Nanjing University, China

Conference Room 5 [叠彩厅] 2nd Floor 14:00-18:00, Sunday Afternoon, October 27, 2019

ID	Paper Title	Author	Affiliation
Keynote 14:00-14:45	Classifying transportation mode and speed from trajectory data via deep multi-Scale learning	Prof. Shaohua Wan	Zhongnan University of Economics and Law
Keynote 14:45-15:30	Enabling Schemes for Pervasive Radio Interface Technologies (ESPRIT): Recent Progress Made Under 5G and New Directions Paving the Way Towards 6G	Prof. Sofi ène Affes	EMT Centre, INRS,The Wireless Lab
15:30-15:40	**COFFEE BREAK**		
Oral	Connected-vehicle data exchanges and positioning computing based on the Publish-Subscribe Paradigm	Kachane Sonklin	Queensland University of Technology
Oral	Real-Time Rating System for Photograph Composition	Yifeng Li	National Taiwan University of Science and Technology
Oral	Link resource allocation in counter-rotating seam of low-orbit satellite network	Jiangwang Liu	School of Electronic Engineering, Beijing University of Posts and Telecommunications
Oral	Edge-Cloud Collaborative Optimization Scheduling with Micro-Service Architecture	Qiuyan Liu	Institute of Network Technology, China Unicom Co.Ltd

Oral	A Dynamic Access Control Method for SDN	Dexian Chang	Third Institute of Information Engineering University
Oral	A Novel Iterative Detection in Downlink of Massive MIMO System	Mingtong Sun	National Communication Research Laboratory, Southeast University
Oral	Seawater Short-range Electromagnetic Wave Communication Method Based on OFDM Subcarrier Allocation	Jun Wang	College of Electronic Science and Technology National University of Defense Technology
Oral	Mobile network computers are natural matches for mobile cloud computing	Zhaoming Guo	Yan'an Unversity
Oral	Propagation Characteristics of Electromagnetic Wave in Seawater Channel for Submerged Buoy	Xiaohan Pan	Tsinghua university
Oral	Container Networking Performance Analysis for Large-Scale User Behavior Simulation	Yifang Ji	Command & Control Engineering College, Army Engineering University of PLA
Oral	Correlated Extra Reductions Defeat Fixed Window Exponentiation*	Xiaohan Meng	Nanjing University of Aeronautics and Astronautics

Part IV Abstracts

Management Service & Education Science

ID: MASS2019_10003

Title: The Inspiration of The Eighteenth Camel: A Case Study on the Participation of Third-Party Organizations in Community Governance

Name: Can Shen
Affiliation: Zhejiang Normal University
Email: 479193971@qq.com

Abstract

Under the background of the continued refinement and efficiency of social divi-sion of labor, the governance body of social is becoming more and more diversi-fied. In China's grassroot government, the importance of third-party organizations is clear, and how to play its role well is an urgent problem. This paper proposed "facilitation", a new concept of mediation, as an attempt to optimize the participation of third-party organizations in governance. A case study with contradiction of neighborhoods was solved in which a team of facilitators participated in. this pa-per also uses empowerment theory, procedural justice theory and other related theories to analyze the event and to summarize this innovative concept's ad-vantages and shortcomings. At last, the author attempts to put forward some suggestions for the application of the concept of facilitation and gives some recommendations to further research.

ID: FLEL2019_10002

Title: Effects of Oracy Building Instruction VIA Blended Learning Environment on Eil Students' Oracy Skills

Name: Dr.Pornpimol Sukavatee, Kusuma Bangkom
Affiliation: Chulalongkorn University
Email: krubua.kusuma@gmail.com

Abstract

The study aims to develop oracy instruction in a blended-learning environment and to investigate the effects of students' oracy skills after implementing the oracy building instruction via blended-learning environment. Twenty-nine high school students in a public school in Rayong were chosen as the sample group.

The finding reveals that there was a significant improvement of the participants' English oracy skills after taking OBIBLE, and the students had positive opinions towards oracy building instruction via blended-learning environment. This research provides empirical evidence for the effectiveness of blended-learning environment and gives useful insights for future students, teachers, and institutions in teaching oracy skills of English.

ID: FLEL2019_10003

Title: Discourse Factors Involved in Distribution of Null-Subject Phenomenon in Mandarin Chinese

Name: Siqi Shi
Affiliation: Nanyang Junior College
Email: mmjudy@126.com

Abstract

This paper aims to examine the null-subject phenomenon in Mandarin Chinese, a discourse-oriented radical pro-drop language, and the factors that contribute to the presence/absence of overt subject pronouns in the language. A questionnaire survey was conducted among 11 Chinese high school students to collect data regarding the usage of null subjects by native Mandarin Chinese speakers. Three discourse factors that affect the distribution of null subjects, namely (a) register, (b) speakers' agency, and (c) nature of information conveyed by subject pronouns, are identified and analysed based on the collected data. Therefore, we should pay more attention to pragmatic factors when refining syntactic theories regarding

null-subjecthood in future studies.

ID: FLEL2019_10100

Title: Research on the Implementing Approaches of Courses Internationalization in Agriculture-related Universities

Name: Yunfei Ma
Affiliation: Tianjin Agricultural University
Email: esther054000@163.com

Abstract

Courses internationalization is to penetrate the frontier and international content in the teaching process in the form of diversification and cultivate students' international communication ability and vision, so that they can not only participate in international exchanges and cooperation, but also care about common topics related to human survival, and respect differences. This paper mainly studies the implementation of courses internationalization. By reviewing the related research progress and practical application at home and abroad, it finds out the existing problems in the process of courses internationalization in agriculture-related universities, and puts forward different mechanisms and implementing approaches of courses internationalization.

ID: FLEL2019_10004

Title: Developing ESP Teaching Materials Based on the Analysis of Information Engineering Majors' Needs

Name: Haiyun Gu
Affiliation: Shanghai Maritime University
Email: hygu@shmtu.edu.cn

Abstract

Currently in China, the available ESP (English for Special Purpose) textbooks for engineering are still focused on reading, translation and grammar. Considering that Chinese undergraduates' general English levels have been improved greatly in the recent years, and many engineering students have plans to apply for graduate study or work in joint ventures in the future, their needs for ESP course have gone beyond the contents of current available textbooks.

This study aims to analyze Chinese engineering undergraduates' needs on ESP course, and discuss how to develop ESP teaching materials and reform ESP teaching methods correspondingly. According to our investigation, the communication skill demanded by EMI (English as a Medium of Instruction) courses and English workplace is the most desirable professional English ability. About 85% of the students prefer using e-textbook, and 53.33% of the students vote for interactive teaching method. Moreover, cross-analysis result shows that students with different vocational plans have different priorities on professional English skills. ESP practitioners need to consider these different needs, and design diverse activities for students.

ID: ECECP2019_10003

Title: Feasibility Analysis of Chinese NGOs Participating in Preschool Education

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Abstract

In China, the participation of NGOs in preschool education stems from government failures and market failures. Preschool education provided by government and private enterprises faces many dilemmas. In terms of value orientation, NGOs agree with preschool education. NGOs can participate in preschool education as the main body of supervision and propaganda, the main body of social education, the main body of education value maintenance and preschool education institution provider. At present, there are many difficulties in the participation of NGOs in preschool education, and corresponding measures need to be taken.

ID: MASS2019_10006

Title: Driving Forces of Industrial Water Pollutant Emission from Spatial-dynamic Perspective in China: Analysis Based on Kaya Equation and LMDI Decomposition

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Abstract

The identification of the driving forces of industrial water pollutant emissions in China is conducive to its effective abatement. It also promotes the coordinated development of China's economic growth and the environment protection. Utilizing the Kaya equation and China's provincial panel data from 1999 to 2015, this paper investigates the spatial-dynamic driving forces governing industrial water pollutant emission. We decompose and quantify the heterogeneous effects of different drivers, that is, technology, energy consumption, and economic size distribution. Applying the LMDI decomposition method, this paper also calculates the contribution of the three drivers to the abatement of industrial water pollutant emissions. The analysis indicates that the most important contribution to pollutant abatement is the development of technology, followed by energy consumption, and the least affected is the distribution of economic scale. In the future, the Chinese government should pay more attention to the impact of energy consumption on pollution abatement. This paper suggests that the Chinese government should improve the clean use of fossil fuel, optimize the energy consumption structure, and develop the use of more clean energy.

ID: MASS2019_10002

Title: C2F2C Strategy Development: The Sichuan Fanqing Furniture Industry Company Case Study*

Name: Liang Zhong ,JinYin ,Maria Santos

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Abstract

In a context of fragmentated competition and consumers' demand, it is difficult to take advantage of the low cost and high efficiency of mass customization, while and also meeting the customers' individualized needs. Internet led business increases the difficulty of balancing the offer of large production and customisation, because companies face a high cost (C2F), while the customer's satisfaction is low (F2C). Finding a solution to this trade-off is not only a major challenge in the process of company model transformation, but also an important topic that has not yet been studied in depth. This research applied the case analysis method to study the evolution of hotel furniture company innovation ecosystem and to suggest the development of value co-creation model. Meanwhile, the C2F2C development strategy of creating value between hotel furniture companies and customers is constructed, which realizes the win-win value creation between companies and customers, and explores the effective ways to improve the technological innovation ability and international competitiveness of hotel furniture companies in China.

ID: MASS2019_10004

Title: An Empirical Study on the Relationship Between Psychological Contract and Job Satisfaction of the Cenozioc Employees

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Abstract

How to manage the cenozioc employees to maximize the value of their human capital has always been a problem that plagues the practice world. However, the research on the relationship between the psychological contract and job satisfaction of the cenozioc employees is still scarce. This study examines the relationship between the psychological contract and job satisfaction of the cenozioc employees based on 142 valid data

collected through structured questionnaire survey. The empirical results show that the cenozioc employees' job return satisfaction has positive correlation with the normative responsibility of organization, interpersonal responsibility of organization, developmental responsibility of organization, normative responsibility and developmental responsibility of employee, and has negative correlation with the interpersonal responsibility of employee. The cenozioc employees' job content satisfaction is positively correlated with the developmental responsibility of organization, normative responsibility and developmental responsibility of employee. The cenozioc employees' job relationship satisfaction is positively correlated with the interpersonal responsibility of organization and developmental responsibility of employee. The research conclusion has be in favor of the complete understanding of the theory of psychological contract and improvement of job satisfaction of the cenozioc employees from the perspective of psychological contract.

Computer Science & Communications

ID: WiCOM2019_10010

Title: Connected-vehicle Data Exchanges and Positioning Computing Based on the Publish-Subscribe Paradigm

Name: Kachane Sonklin,Charles Wang,Dhammika Jayalath,Yanming Feng

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Abstract

Connected vehicles for safety and traffic efficient applications require device-to-device connections supporting one-to-many and many-to-many communication, precise absolute and relative positioning and distributed computing. Currently, the 5.9 GHz Dedicated Short Range Communications (DSRC) and 4G-Long-Term Evolution (LTE) are available for connected vehicle services. But both have limitations in reliability or latency over large scale field operational tests and deployment. This paper proposes the device-to-device (D2D) connectivity framework based on publish-subscribe architecture, with Message Queue Telemetry Transport (MQTT) protocol. With the publish-subscribe communication paradigm, road mobile users can exchange data and information in moderate latency and high reliability manner, having the potential to support many Vehicle to Everything (V2X) applications, including vehicle to vehicle (V2V), vehicle to roadside infrastructure (V2I), and vehicle to bicycle (V2B). The D2D data exchanges also facilitate computing for absolute and relative precise real-time kinematic (RTK) positioning. Vehicular experiments were conducted to evaluate the performance of the proposed publish-subscribe MQTT protocols in term of latency and reliability. The latency of data exchanges is measured by One-trip-time (OTT) and the reliability is measured by the packet loss rate. Our results show that the latency of GNSS raw data exchanges between vehicles through 4G cellular networks at the rate of 10 Hz and the data rates of 10 kbps are less than 300 ms while the reliability is over 96%. Vehicular positioning experiments have also shown that vehicles can exchange raw GNSS data and complete moving-base RTK position-ing with the positioning availability of 98%.

ID: WiCOM2019_10011

Title: Real-Time Rating System for Photograph Composition

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Abstract

“Composition” is a creative way for expressing what you want through the layout and structure of an image. Photograph composition is a key value for visual eff ects. Through composition, photographers can let images convey the information that they want to express, and attract the attention of the audience. Although there is no absolute formula and rule in composition, objectively there are some formal rules, such as rule of thirds and symmetry and so on. Diff erent from previous researches, where most of them perform analysis after the images are taken. In this paper, we propose and design a photography application, which can rate the frame according to the user-selected composition setting. This helps a user know the basis of photography composition theory in the process of photograph, and understand the elements and principles that play important roles in photographic creation, as well as in its visual eff ect. In this paper, eight common composition criteria are selected for analysis: horizon, rule of thirds, triangle, convergence, frame, intensity balance and contrast.

ID: WiCOM2019_10012

Title: Edge-Cloud Collaborative Optimization Scheduling with Micro-Service Architecture

Name: Qiuyan Liu

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Abstract
The architecture of edge-cloud cooperation is proposed as a compromising solution that combines the advantage of MEC and central cloud. In this paper we investigated the problem of how to reduce the average delay of MEC application by collaborative task scheduling. The collaborative task scheduling is modeled as a constrained shortest path problem over an acyclic graph. By characterizing the optimal solution, the constrained optimization problem is simplified according to one-climb theory and enumeration algorithm. Generally, the edge-cloud collaborative task scheduling scheme performance better than independent scheme in reducing average delay. In heavy workload scenario, high blocking probability and retransmission delay at MEC is the key factor for average delay. Hence, more task executed on central cloud with abundant resource is the optimal scheme. Otherwise, transmission delay is inevitable compared with execution delay. MEC configured with higher priority and deployed close to terminals obtain more performance gain.

ID: WiCOM2019_10016
Title: A Dynamic Access Control Method for SDN
Name: Dexian Chang
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Abstract
Aiming at the problem that network topology changes frequently in SDN (Software Defined Network) environment and it is difficult to implement fine-grained access control, using the characteristics of SDN transfer control separation and software programming, the attribute-based access control model ABAC (Attribute-Based Access Control) is extended by introducing security level, and the security level is defined for the attributes of subject and object to establish the access mapping relationship based on mandatory access rules. At the same time, using secure access path as SDN access control attribute, a dynamic generation method of access control path based on PSO (Particle Swarm Optimization) algorithm is designed to ensure the security of access data flow. The prototype system experiments show that the proposed method takes into account the fine-grained and dynamic requirements of SDN access control, and improves the access security of SDN while ensuring the access efficiency.

ID: WiCOM2019_10017
Title: A Novel Iterative Detection in Downlink of Massive MIMO System
Name: Mingtong Sun, Jie Wang, Dongming Wang, Lijun Zhai
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Abstract
In this paper, we propose the novel iterative detection which operates iteratively on blocks of the received signal in downlink in massive MIMO (Massive Multiple-input Multiple-output) system. This article will combine the equivalent channel with soft detection and soft decoder, and finally propose a new structure for the iterative detection in downlink based on 5G simulation test platform of NCRL and analysis the performance of the novel structure. The simulation result shows iterative algorithm performs better than conventional detection with lower amount of iterations.

ID: WiCOM2019_10006
Title: Link resource allocation in counter-rotating seam of low-orbit satellite network
Name: Ning Li,Jiangwang Liu,Zhongliang Deng
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Abstract

This paper studies the communication problem at the counter-rotating seam of the low-orbit satellite based on the walker constellation. The counter-rotating seam has a short life cycle, low capacity, and dynamic geometric parameters. In order to make better use of the scarce link resources at the seam, increase the network throughput, approach the physical limit of the link throughput at the seam, calculate the initial phase condition that maximizes the throughput of the counter-rotating seam link. In the experimental simulation results using the Iridium system as an example, it is shown that better throughput can be obtained under the initial conditions, and the throughput is improved by about 30%.

ID: WiCOM2019_10020

Title: Container Networking Performance Analysis for Large-Scale User Behavior Simulation

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Abstract

Accurately simulating large-scale user behavior is important to improve the similarity between the cyber range and the real network environment. The Linux Container pro-vides a method to simulate the behavior of large-scale users under the constraints of limited physical resources. In a container-based virtualization environment, container networking is an important component. To evaluate the impact of different networking methods between the containers on the simulation performance, the typical container networking methods such as none, bridge, macvlan were analyzed, and the performance of different networking methods was evaluated according to the throughput and latency metrics. The experiments show that under the same physical resource constraints, the macvlan networking method has the best network performance, while the bridge method has the worst performance. This result provides a reference for se-lecting the appropriate networking method in the user behavior simulation process.

ID: WiCOM2019_10001

Title: Seawater Short-range Electromagnetic Wave Communication Method Based on OFDM Subcarrier Allocation

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Abstract

Aiming at the problems of underwater acoustic communication such as narrowband, low speed and multipath effect, this paper studies the high-speed communication technology of electromagnetic wave in short distance at sea. The channel model of seawater electromagnetic wave is given, and the performance of different modulation modes in this channel is analyzed. A method of seawater short-range high-speed elec-tromagnetic wave communication based on OFDM is proposed. In order to reduce the BER of the system, a method of allocating different modulation modes to subcarriers in seawater channel is introduced, which combines frequency domain equalization. This method has low complexity, improves the utilization of frequency band, and im-proves the reliability. It can realize high-speed and reliable communication in short distance in seawater.

ID: WICOM2019_10030

Title: Mobile network computers are natural matches for mobile cloud computing

Name: Zhaoming Guo

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Abstract

Before the appearance of mobile Internet, I first presented the concept of Mobile Network Computer in

1997.3 in Chinese journal. Until 2015.7, nearly 20 years later, I extended this concept to SCI journals and got good feedback from scholars all over the world. Mobile network computer has two main functions: mobile network communication & mobile network computing. Some applications such as mobile network monitoring, mobile network control and mobile network positioning, etc. are included in two main functions.

In this paper, we introduce the definition of Cloud Computing, the elaboration of Cloud Computing and illustrate the relation of mobile network computer and cloud computing. For the sake of argument, we can further consider the relationship between mobile network computers and cloud computing as mobile cloud computing. Mobile cloud computing shows the accuracy of the concept of mobile network computer in the information age, while "mobile phone", "mobile computer", and "mobile terminal" cannot explain the technical nature of terminals nor the reality of mobile cloud computing. Therefore, mobile network computer has the uniqueness of better describing mobile terminals in the information age.

With the mature of cloud computing technology and Internet of things; mobile network computer will present diversificating trend, which may include not only mobile phone, but may also include devices such as smart foot rings, smart watches, smart glasses, smart shoes, smart coats and artificial intelligence such as robots, driverless vehicles and other intelligence terminals.

In a word, mobile network computers are natural matches for mobile cloud computing.

ID: WiCOM2019_10022

Title: Correlated Extra Reductions Defeat Fixed Window Exponentiation*

Name: Xiaohan Meng

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Abstract

The security of modular power algorithm is a very important research topic, which is the core operation of public key cryptography algorithm. Since the first timing attack was public in 1996, the attacker can exploit time differences between specific events to recover a secret key. In 2016, Dugardin took advantage of extra reductions to attack a regular exponentiation algorithm, which did not entirely adapt the fixed window method with Montgomery's algorithm. The central thesis of this paper is that there exists a positive correlation between extra reductions of pre-computation and post-computation when the calculation has the same multiplier factor. In this article, basing on this dependency we present an attack method, and confirm the feasibility and effectiveness of it by conducting simulation experiments. Experimental results verify that the method can effectively attack modular power algorithm.

ID: WiCOM2019_10005

Title: Propagation Characteristics of Electromagnetic Wave in Seawater Channel for Submerged Buoy

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Abstract

The safety of submerged buoy is higher than traditional buoy. The most important problem for submerged buoy is that signal will be attenuated greatly due to ocean wave fluctuation and seawater. On the basis of ocean wave model, propagation characteristics of electromagnetic wave in seawater channel for submerged buoy is analyzed in this letter. It includes the propagation properties of electromagnetic wave in seawater and across the air-sea interface. The results show that the VHF frequency band, first order sea level and water depth of less than 10cm are acceptable for submerged buoy.

Part V Instructions for Presentations

Oral Presentation

Devices Provided by the Conference Organizing Committee:

- Laptops (with MS-office & Adobe Reader)
- Projectors & Screen
- Laser Sticks

Materials Provided by the Presenters:

- PowerPoint or PDF files

Duration of each Presentation:

- Regular Oral Session: 15-20 Minutes of Presentation
- Plenary/Invited Speech: 30-40 Minutes of Presentation

Poster Presentation

Materials Provided by the Conference Organizing Committee:

- X Racks & Base Fabric Canvases (60cm×160cm, see the figure below)
- Adhesive Tapes or Clamps

Materials Provided by the Presenters:

- Home-made Posters

Requirement for the Posters:

- Material: not limited, can be posted on the Canvases
- Size: smaller than 60cm×160cm
- Content: for demonstration of the presenter's paper

Part VI Hotel Information

About Hotel

Guilin Grand Link Hotel（桂林桂山华星酒店） locates on the bank of Li River in the beautiful city of Guilin which enjoys the fame as “having the best scenery in China”. Facing the city badge the Elephant Trunk Hill across the river and adjacent to the Seven Star Park and ZiZhou Island Park. It is only 10 minutes’ ride to the downtown city, the railway station, the Hi-tech Industrial Zone and International Exhibition & Conference Center, 45 minutes to Guilin Liangjiang International Airport. It is the only luxury garden resort hotel on the Li River bank and near the gardens.

Address: No. 42 Chuanshan Road, Guilin City, Guangxi Zhuang Autonomous Region, China
(中国广西壮族自治区桂林市穿山路 42 号)
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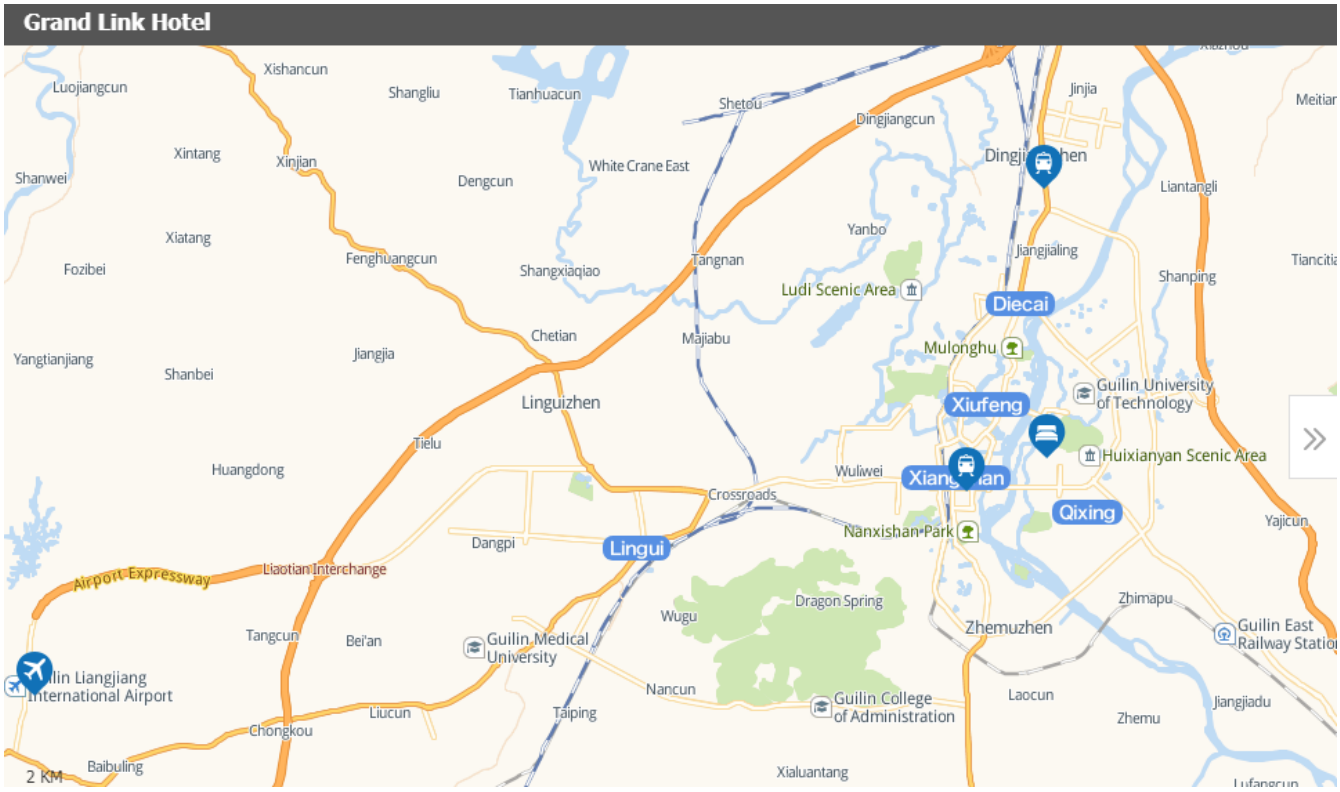
For non-Chinese author, please show the following info to the driver if you take a taxi:
请送我到：中国广西壮族自治区桂林市穿山路42号 桂林桂山华星酒店



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