



The 16th International Conference on Service Oriented Computing

November 12-15, 2018, Hangzhou, China

CONFERENCE PROGRAM



ICSOC 2018 Conference Program

Time	Monday, 12 Nov	Tuesday, 13 Nov	Wednesday, 14 Nov	Thursday, 15 Nov
8:00AM – 9:00AM	Registration			
9:00AM – 10:30AM	Workshops Program/ PhD Symposium	Opening Keynote 1 Schahram Dustdar <i>BALLROOM II</i>	Keynote 2 Liming Zhu <i>BALLROOM II</i> Demo Flash Talks	Session 13. Social and Interactive Services <i>BALLROOM II</i>
10:30AM – 11:00AM		Group Photo + Coffee break	Coffee break	Session 14. Services and Processes <i>Room SALON III</i>
11:00AM – 12:30PM		Session 1. Recommendation I <i>BALLROOM II</i>	Session 9. Recommendation II <i>BALLROOM II</i>	Keynote 3 Jeff Zeng <i>BALLROOM II</i>
		Session 2. Quality of Service <i>Room SALON III</i>	Session 10. Service Applications <i>Room SALON III</i>	
		Session 3. Service Engineering I <i>Room SALON IV</i>	Session 11. Service Management II <i>Room SALON IV</i>	
12:30PM – 2:00PM		Lunch	Lunch	Lunch
2:00PM – 3:30PM		Session 4. Edge + IoT Services I <i>BALLROOM II</i>	Panel <i>BALLROOM II</i>	Session 15. Edge + IoT Services II <i>BALLROOM II</i>
		Session 5. Service Management I <i>Room SALON III</i>		Session 16. Service Analytics <i>Room SALON III</i>
		Session 6. Service Engineering II <i>Room SALON IV</i>		
3:30PM – 4:00PM		Coffee break	Coffee break	Closing <i>BALLROOM II</i>
4:00PM – 5:30PM	Session 7. Service Trust and Security <i>BALLROOM II</i>	Demo Session <i>Room SALON III</i>		
	Session 8. Microservices <i>Room SALON III</i>	Session 12. Business Services and Processes <i>BALLROOM II</i>		
7:00PM – 9:30PM	Welcome Reception		Gala Dinner	

All Full Papers: **20 mins** [presentation time] + **5 mins** [question time]

All Short Papers: **10 mins** [presentation time] + **5 mins** [question time]

Workshops / PhD Symposium Program

Time	DDBS	ADMS	NLS4IoT	CIoTS	ASOCA & ISyCC	PhD Symposium
Room	Room SALON I		Room SALON II	Room SALON III	Room SALON IV	
9:00AM – 10:30AM	Session I		Session I	Session I	Session I	
10:30AM – 11:00AM	Coffee Break					
11:00AM – 12:30PM	Session II		Session II	Session II		
12:30PM – 2:00PM	Lunch					
2:00PM – 3:30PM		Session I	Session III	Session III		Session I
3:30PM – 4:00PM	Coffee Break					
4:00PM – 5:30PM		Session II		Session IV		Session II

All Full Papers: **20 mins** [presentation time] + **5 mins** [question time]

All Short Papers: **10 mins** [presentation time] + **5 mins** [question time]

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Message from the General Chairs

It is our great pleasure to welcome you to the 16th International Conference on Service Oriented Computing, ICSOC 2018, Hangzhou, China. Over the years, the service-oriented computing (SOC) paradigm has established itself as an interdisciplinary methodology that comprehensively addresses modern software development needs. Service orientation combines established best practice principles of modularization and encapsulation, allowing architectures of large-scale software systems to be designed, analyzed and deployed successfully. The services paradigm enables the right level of abstraction to achieve loosely coupled, independent, and reusable software artefacts with well-defined interfaces. It has evolved into a technology to embody and express the ubiquity of software that transforms our society from an industrial, production-centric economy into a digital, service-centric economy. Since the first edition of the International Conference on Service Oriented Computing (ICSOC) in 2003, the conference has grown to become the top international forum in service-oriented computing for academics, industry researchers, developers, and practitioners to report and share latest research results and innovation.

The ICSOC 2018 program features:

- 3 keynote talks
- 16 research and industry paper sessions
- 1 panel session
- 1 demonstration track
- 6 workshops
- 1 PhD symposium, and
- 1 industry forum

We would like to thank the ICSOC Steering Committee for selecting Hangzhou as the host city of ICSOC 2018 and supporting us during all the preparation period. We would like to thank the organization team and our colleagues for their great efforts in producing this excellent program: PC chairs, workshops chairs, PhD symposium chairs, demonstration chairs, panel chairs, publicity chairs, publication chair, finance chair, Web chairs, industry chairs, sponsorship chairs, and the local organization chair. We would like to thank our keynote speakers, panelists and the authors for presenting and showcasing their work at ICSOC 2018. We also would like to express our gratitude to the PC members, senior PC members, and external reviewers. Without their expertise and dedication, this high quality program would not have been possible.

We thank our generous ICSOC 2018 sponsors: Zhejiang University, Macquarie University, Harbin Institute of Technology, Hangzhou Dianzi University, Alibaba Group (Gold), Xigua (Gold), Deao (Silver), Explore (Bronze), IBM, Springer, ServTech, and IFIP.

It has been a great privilege to serve as the General Chairs of ICSOC 2018 and it is our hope that you find the conference stimulating, fulfilling, and enjoyable. We thank you for your support of ICSOC and your attendance, and wish you a pleasant experience in Hangzhou and ICSOC 2018.

Michael Sheng, Zhaohui Wu, Xiaofei Xu
General Chairs, ICSOC 2018

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ICSOC 2018 Keynote Talks

Keynote 1, November 13, 2018

On Research Challenges in IoT Systems Engineering

Speaker: Schahram Dustdar, Professor of Computer Science, IEEE Fellow, ACM Distinguished Scientist, TU Wien, Austria

Abstract: This talk explores the research challenges in the domain of IoT from multiple angles and reflects on the urgently needed collective efforts from various research communities to collaborate on those. Our approach fundamentally challenges the current understanding of scientific, technological, and political paradigms in tackling the engineering of IoT systems. We discuss technical paradigms and research challenges in the domains of Cloud and Edge Computing as well as the requirements of people in such systems.



Schahram Dustdar is Professor of Computer Science heading the Distributed Systems Group at the Technical University of Vienna. From 2004-2010 he was also Honorary Professor of Information Systems at the Department of Computing Science at the University of Groningen (RuG), The Netherlands. From 1999 - 2007 he worked as the co-founder and chief scientist of Caramba Labs Software AG in Vienna (acquired by Engineering NetWorld AG), a venture capital co-funded software company focused on software for collaborative processes in teams. Caramba Labs was nominated for several (international and national) awards: World Technology Award in the category of Software (2001); Top-Startup companies in Austria (Cap Gemini Ernst & Young) (2002); MERCUR Innovationspreis der Wirtschaftskammer (2002).

From Dec 2016 until Jan 2017 he was a Visiting Professor at the University of Sevilla, Spain and from January until June 2017 he was a Visiting Professor at UC Berkeley, USA. He is co-Editor-in-Chief of the new ACM Transactions on the Internet of Things as well as Editor-in-Chief of Computing (Springer). He is an Associate Editor of IEEE Transactions on Services Computing, IEEE Transactions on Cloud Computing, ACM Transactions on the Web, and ACM Transactions on Internet Technology, as well as on the editorial board of IEEE Internet Computing and IEEE Computer. Dustdar is recipient of the ACM Distinguished Scientist award (2009), the IBM Faculty Award (2012), an elected member of the Academia Europaea: The Academy of Europe, where he is chairman of the Informatics Section, as well as an IEEE Fellow (2016).

Keynote 2, November 14, 2018

Distributed Trust: How Data-Driven Applications, AI and Blockchain is Impacting Service Oriented Computing

Speaker: Liming Zhu, Research Director of Software and Computational Systems Research Program, Data61, CSIRO

Abstract: A key premise of service-oriented computing is about trusting the computing behind the service interface. This often relies on trusting the entities running the services and the algorithms behind the services. These assumptions are being challenged. Trust in institutions is at its historical low while our life is increasingly decided by complex data-driven algorithmic learnings that humans do not fully understand. This talk will discuss the emerging of distributed trust and how it may help improve trust in services and deal with black-box algorithmic decision making. The talk will also discuss the role of consumer data rights (a new legislation Australian government is introducing with Data61 being the standard setter) in driving new trustworthy service-oriented applications.



Dr. Liming Zhu is the Research Director of Software and Computational Systems Research Program at Data61, CSIRO. Data61 is part of The Commonwealth Scientific and Industrial Research Organization (CSIRO) and Australia's data/ICT innovation hub. The research program has 200+ people innovating in the area of big data infrastructure, computational and simulation sciences platforms (including verticals such as imaging, VR/AR, health), trustworthy systems, distributed systems, legal informatics, blockchains, software ecosystems, software engineering/architecture, DevOps, privacy and cybersecurity. He is also a conjoint full professor position at University of New South Wales (UNSW). He is a Graduate of the Australian Institute of Company Directors. He formerly worked in several technology lead positions in software industry before obtaining a PHD degree in software engineering from UNSW. He has been a research lead in several collaborative projects with Australia government agencies,

defence, standardisation bodies and commercial companies. For example, he led the B2B reference software architecture effort for Australia's lending industry. He was a committee member of the Standards Australia IT-015 (system and software engineering) group and IT-038 (Cloud Computing) group and contributes to the ISO/SC7/WG42 on architecture related standards. He is currently the chairperson of Standards Australia's blockchain and distributed ledger committee. He has supervised more than a dozen PhD students as their primary supervisor and taught software architecture courses at UNSW and University of Sydney. His personal research interests include software architecture, dependable and secure systems and data analytics infrastructure. He has published more than 150 academic papers on software architecture, dependable and secure systems and data analytics infrastructure. His recent book is DevOps: A Software Architect's Perspective (2015, part of the CMU/SEI Series and published by Addison-Wesley).

Keynote 3, November 15, 2018

Deep Insight of End to End E-Commerce Business Management

Speaker: Jeff Zeng, Senior Staff Engineer, Alibaba Group

Abstract: In the context of E-Commerce eco-system, there are hundreds of millions of consumers, thousands of businesses and shops, and hundreds of delivery people. Alibaba Group, as one of the main E-Commerce providers, cooperates with tens of thousands of software vendors to provide all necessary software services to support the business. With the booming of eco-business, more ecological roles in E-Commerce businesses emerge. For instance, Alibaba Group has expanded its business scale from Taobao Software to several business units, with 10000 plus technical staff. Large E-Commerce businesses such as Alibaba Group need to support a large number of applications and business modules, and cater for hundreds of business requirements and independent changes on a daily basis. As such, there are several changes: 1) we lack a requirement management mechanism from a full business chain perspective, resulting in low cooperation efficiency; 2) The business and the platform are not well separated, which makes it unable to support self-development of the business; 3) The business customization is performed from the system's perspective, instead of the full business chain's perspective, thus bringing much inconvenience to developers who need to understand hundreds of systems during one round of business customization; 4) there is a lack of cross-market, highly reusable and transplantable business assets. In light of the above-mentioned challenges, we develop a product named Halo. Based on those design ideas and decisions, we started developing Halo since 2015. Until now, Halo has been successfully applied in upgrading the systems of several core business platforms, including the trading platform, the commodity platform, the marketing platform and the fund platform. Compared to the old mechanism, the use of Halo significantly reduces the threshold required for developing the business customization, and increases development efficiency to a large extent. Meanwhile, with the scenario-based business capability SDKs, it is easier to achieve high reusability of business logics (e.g. pre-sale, e-certificate, virtual commodities, payment on arrival of goods, etc.) in a cross-market and cross-region manner.



Jeff Zeng is a senior staff engineer at Alibaba Group. He is now leading the core trade platform which is the foundation of Alibaba's key business. Jeff is also in charge of Alibaba financial platform and business innovation by applying block chain technology. Prior to this, he was a Global development Director of Small and Medium Enterprise at SAP. He has been working on global enterprise product development in the Internet industry for about 10 years. Jeff received his master degree from East China Normal University, and bachelor degree from Shanghai University.

ICSOC 2018 Panel

Theme: Internet of Things and Services: Friends or Foes?

The Internet has provided a unique framework to connect computers all over the world. The Internet of Things (IoT) sets to extend the connections to those everyday things that previously did not connect to the Internet. It is not an "if" but "when" we will have trillions of things which are web-enabled.

The service paradigm has elevated the computing abstraction to the human level and relegated data to where it should be, i.e., as the raw material needed to produce the finished product. However, the service paradigm suffers from lukewarm taken up from industry as a result of the confusion created between the paradigm and the technology. A distinguished panel will discuss and debate the suitability of the service paradigm as a key delivery mechanism for IoT infrastructure and applications.

Moderator

Jian Yang, *Macquarie University, Australia*

Panelists

Prof. Alistair Barros, *Queensland University of Technology, Australia*

Prof. Schahram Dustdar, *TU Wien, Austria*

Prof. Michael Sheng, *Macquarie University, Australia*

Prof. Liang Zhang, *Fudan University, China*

ICSOC 2018 Workshops

The 1st International Workshop on Data-Driven Business Services (DDBS)

We are entering the era of Big Data which brings new opportunities and challenges to design and optimize business services. More and more companies are increasingly turning to Big Data for insight to support their decisions and provide targeted service to enhance user satisfaction. Big Data by itself, regardless of the size, type, or accumulation speed, is worthless unless business analytics are employed by managers to deliver value to their organizations. The aim of data-driven business services is to employ big data to uncover the hidden service patterns, the unknown correlations, personalized customer preferences and other useful business information in various service fields. The analytical findings can lead to more effective marketing, new revenue opportunities, better customer service, improved operational efficiency, competitive advantages over rival organizations and other business benefits.

Workshop Chair

Yezheng Liu, Key Laboratory of Process Optimization and Intelligent Decision-making, Ministry of Education, China

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The 1st International Workshop on Networked Learning Systems for Secured IoT Services and Its Applications (NLS4IoT)

While there are many important topics within the Big Data field, recent research suggested that learning models are critical for many real-world complex systems in associated with data analysis. The current i.i.d. ness-based learning methods cannot handle the coupling relations due to the increased complexity, multiple dimensionalities and heterogeneity of the data, they cannot efficiently find the inter-relationship and intra-relationship with such scale, and they do not scale well and nor do they perform well under highly unstructured, unpredictable conditions (data volume, data variety, data categories etc.). If these problems are resolved, the new learning methods can be the foundation to build up new Big Data applications, to further reduce financial and environmental costs, minimize under-utilized resources, and achieve better performance. Therefore, the new learning systems and applications have drawn growing attention in the community.

To this end, we propose this workshop entitled “Networked learning systems for secured sensing and Its Applications for Big Data Analytics”. The purpose of this workshop is to solicit papers that advance the fundamental theoretical understanding, technological design, and applications related to learning systems for Big Data analytics. The artificial neural network and machine learning methods are promising in solving the wide variety of analytical tasks that are hard to solve using ordinary rule-based programming. More importantly, we explore the new smart learning systems that are of vital importance in such complex, large, heterogeneous, and uncertain Big Data era. This special issue invites paper submissions on the most recent developments in security and learning architectures, neural network design, new data representation, tasks optimization, semi-supervised and coupled learning, and applications to real-world tasks. We also welcome survey and overview papers in these general areas pertaining to learning and neural network architectures, etc.

PC Co-Chairs

Frank Jiang, *University of Technology, Australia*
Haiying Xia, *Guangxi Normal University, China*

Key Organization Committee Members

Steve Ling, *University of Technology, Australia*
Lei Pan, *Deakin University, Australia*
Rolando Trujillo Rasua, *Deakin University, Australia*

The 8th International Workshop on Context-Aware and IoT Services (CIoTS)

Context-awareness, the capability of a system to sense and react based on its environment, is an intrinsic feature for Internet of Things (IoT) applications and services in which digital and physical things or objects such as sensors, smart devices, and vehicles connect and communicate. Context-aware IoT services is one of the most exciting trends in computing today that holds the potential to make our daily life more productive, convenient and enjoyable.

With a special attention to the modern IoT systems, the topics of this workshop cover all the aspects of context-aware processes, services and data in the service-oriented computing field ranging from its theoretical foundations, support infrastructures and middleware, engineering approaches, to their applications and case studies.

General Chairs

Yanbo Han, *North China University of Technology, China*

Liang Zhang, *Fudan University, China*

Programme Chairs

Jian Yu, *Auckland University of Technology, New Zealand*

Guiling Wang, *North China University of Technology, China*

Sira Yongchareon, *Auckland University of Technology, New Zealand*

Programme Committee

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Kaikai Chi, *Zhejiang University*

Paolo Falcarin, *University of East London*

Changjun Hu, *University of science and technology Beijing*

Md. Saiful Islam, *Griffith University*

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Veronica Liesaputra, *Unitec Institute of Technology*

Talal H. Noor, *Taibah University*

Saeed Rehman, *Auckland University of Technology*

Aviv Segev, *Korea Advanced Institute of Science and Technology*

Jun Shen, *University of Wollongong*

Hong-Linh Truong, *Vienna University of Technology*

Weiqi Yan, *Auckland University of Technology*

Lianghuai Yang, *Zhejiang University*

Lina Yao, *The University of New South Wales*

Muhammad Younas, *Oxford Brookes University*

Dongjin Yu, *Hangzhou Dianzi University*

Qi Yu, *Rochester Institute of Technology*

Sherali Zeadally, *University of Kentucky*

Xuyun Zhang, *The University of Auckland*

Peng Zhang, *Institute of information engineering*

Xiaohui Zhao, *University of Canberr*

The 3rd Workshop on Adaptive Service-Oriented and Cloud Applications (ASOCA)

The concept of adaptive and reconfigurable SOA has been introduced in order to describe architectures, which exhibit functional and non-functional properties. An adaptive and reconfigurable SOA can repair itself if any execution problems occur, in order to successfully complete its own execution, while respecting functional and NF agreements. In the design of an adaptive and reconfigurable software system, several aspects have to be considered. For instance, the system should be able to predict or to detect degradations and failures as soon as possible and to enact suitable recovery actions. Moreover, different NF requirements service levels might be considered in order to complete the execution in case of failure. Contributions are devoted to the design and the implementation of adaptive and reconfigurable service oriented and cloud applications and architectures.

Workshop Organizers

Ismael Bouassida Rodriguez, *ReDCAD, University of Sfax, Tunisia*
Khalil Drira, *LAAS-CNRS and Univ. de Toulouse, France*
Shizhan Chen, *Tianjin University, Tianjin, China*

Web and publicity chair

Chaabane Mariam, *ReDCAD, FSEGS, University of Sfax, Tunisia*

Program Committee

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Salah Sadou, *IRISA, University of South Brittany, France*
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Ian Gorton, *SEI, USA*
Youakim Badr, *INSA-Lyon, France*
Amal Gassara, *CRNS, Tunisia*
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Imen Lahyani, *ENIS, Tunisia*
Marcos Da Silveira, *LIST- Luxembourg Institute of Science and Technology, Luxembourg*
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Flavia Delicato, *Federal University of Rio de Janeiro (UFRJ), Brazil*
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Layth Sliman, *EFREI, France*

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Slim Kallel, *ReDCAD, University of Sfax, Tunisia*
Ernesto Exposito, *Univ. De Pau, France*
Cedric Eichler, *LIFO-Laboratoire d'Informatique Fondamentale d'Orleans, France*
Sami Yangui, *Univ. Concordia, Canada*
Samir Tata, *Research - Almaden, USA*
Samir Medjiah, *LAAS-CNRS, France*
Michael Mrissa, *Univ. De Pau, France*
Elisa Yumi Nakagawa, *Univ. of Sao Paulo, Brazil*
Thais Batista, *UFRN, Brazil*

The 1st International Workshop on AI and Data Mining for Services (ADMS)

Service management has been increasingly challenging for IT enterprises that create, deploy, and maintain services and infrastructure for a variety of customers and produce data at a large volume and velocity. At any given point, these enterprises need to know a myriad of information regarding the status, risk/compliance, business objectives, and operational health of the services involved. Further, business goal alignment and customer experience need to be prioritized and, accordingly, managed in an agile and optimized manner. To do so, enterprises are constantly seeking novel technologies and solutions in cognitive platforms, advanced analytics and learning, and interactive frameworks. With the proliferation of cloud computing, microservice architectures and IoT data fabrics, the enterprises face new challenges in operating their business with increased efficiency, reduced cost, faster time-to-market, and enhanced customer experience. For example, enterprises such as Amazon and Google can create, deploy and market new features/capabilities multiple times within the same day.

Organizing Committee

Anup Kalia, IBM T. J. Watson Research Center, NY, US

Jin Xiao, IBM T. J. Watson Research Center, NY, US

Fanjing Meng, IBM Research Lab, Beijing, China

Larisa Shwartz, IBM T. J. Watson Research Center, NY, US

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Qi Yu, Rochester Institute of Technology, US

Rahul Pandita, Phase Change Software, US

Samir Tata, LG Silicon Valley Lab, US

Schahram Dustdar, TU Wien, Austria

The 3rd International Workshop on IoT Systems for Context-aware Computing (ISyCC)

The number of connected IoT devices is exploding during the last years. According to Gartner, the total number of connected "things" will reach 26 billion units by 2020. This trend is bringing several challenges to be addressed when it comes to building efficient and reliable IoT systems. The devices involved in these applications are getting smaller and smarter, while the conditions and constraints to be satisfied are increasingly complex. In addition, with the aim of increasing user satisfaction, these devices should be aware of the context, knowing the user's preferences and needs; so that they can adapt their behavior to each situation. Further increasing, their complexity.

These challenges pose some questions that need further discussion from researchers: How to enable collecting, managing and sharing massive amounts of data with other connected "things" and/or prospective software in the Cloud? How this information could be used to adapt the smart devices' behavior? What is the role of the (Mobile) Cloud Computing and the Fog Computing? How to provide appropriate resources in these environments?

The objective of this workshop is to encourage and attract multidisciplinary research in Internet of Things, (Mobile) Cloud Computing, Distributed and Cloud-Aware IoT systems, Context-Awareness and (Mobile) Crowdsensing.

Workshop Organizers

Mohamed Mohamed, *IBM Almaden Research Center, CA, USA*

Sami Yangui, *CNRS LAAS, Toulouse, France*

Zhangbing Zhou, *China University of Geosciences, Beijing, China*

Program Committee

Ahmed Samet, *INSA Strasbourg, France*

Alois Ferscha, *Institut für Pervasive Computing, Austria*

Brahmananda Sapkota, *Samsung Electronics, South Korea*

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Mohamed Graiet, *University of Monastir, Tunisia*

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Mourad Kmimeche, *University of Monastir, Tunisia*
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Romain Rouvoy, *University of Lille, France*
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Tommi Mikkonen, *University of Helsinki*
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Wenwen Li, *Arizona State University, US*
Wided Guedria, *LIST, Luxembourg*
Xiaoping Che, *Beijing Jiaotong University, China*
Yijun Yu, *The Open University, United Kingdom*
Yu Zheng, *South China Normal University, China*

Tuesday November 13, 2018 Detailed Program

Tuesday 8:00AM – 9:00AM, Registration

Tuesday 9:00AM – 10:30AM, BALLROOM II

The Opening Ceremony

Keynote 1: On Research Challenges in IoT Systems Engineering

Speaker: Schahram Dustdar, Professor of Computer Science, IEEE Fellow, ACM Distinguished Scientist, TU Wien, Austria

Session Chair: Prof. Michael Sheng, *Macquarie University, Australia*

Tuesday 10:30AM – 11:00AM, Group Photo + Coffee Break

Tuesday 11:00AM – 12:30PM

Session 1: Recommendation I, BALLROOM II

Session Chair: Prof. Jian Yang, *Macquarie University, Australia*

Expert Recommendation via Tensor Factorization with Regularizing Hierarchical Topical Relationships
Chaoran Huang, Lina Yao, Xianzhi Wang, Boualem Benatallah, Shuai Zhang, Manqing Dong

Software service recommendation base on Collaborative Filtering Neural Network model
Liang Chen, Angyu Zheng, Yinglan Feng, Fenfang Xie, Zibin Zheng

A Weighted Meta-graph based Approach for Mobile Application Recommendation on Heterogeneous Information Networks
Fenfang Xie, Liang Chen, Yongjian Ye, Yang Liu, Zibin Zheng, Xiaola Lin

(SHORT) Temporal-Sparsity aware Service Recommendation Method via Hybrid Collaborative Filtering Techniques
Shunmei Meng, Qianmu Li, Shiping Chen, Shui Yu, Wanchun Dou

Session 2: Quality of Service, Room SALON III

Session Chair: Dr. Antonio Bucchiarone, *FBK, Italy*

Constraint-based Model-driven Testing of Web Services for Behavior Conformance
Chang-ai Sun, Meng Li, Jingting Jia, Jun Han

QoS Optimization of Service Clouds Serving Pleasingly Parallel Jobs
Xiulin Li, Li Pan, Shijun Liu, Xiangxu Meng

Estimating the Performance of Cloud-Based Systems Using Benchmarking and Simulation in a Complementary Manner

Haan Johng, Doohwan Kim, Tom Hill, Lawrence Chung

(SHORT) Two-Phase Web Service QoS Prediction with Symmetric Restricted Boltzmann Machine

Lu Chen, Yuyu Yin, Yueshen Xu, Liang Chen, Jian Wan

Session 3: Service Engineering I, Room SALON IV

Session Chair: Prof. Khalil Drira, *LAAS-CNRS and Univ. de Toulouse, France*

Constructing and Evaluating an Evolving Web-API Network for Service Discovery

Olayinka Adeleye, Jian Yu, Sira Yongchareon, Yanbo Han

Stigmergic Service Composition and Adaptation in Mobile Environments

Andrei Palade, Christian Cabrera, Gary White, Siobhán Clarke

State of the Practice in Service Identification for SOA Migration in Industry

Manel Abdellatif, Geoffrey Hecht, Hafedh Mili, Ghizlane El Boussaidi, Naouel Moha, Anas Shatnawi, Jean Privat, Yann-Gael Guéhéneuc

(SHORT) A Truthful Mechanism for Optimally Purchasing IaaS Instances and Scheduling Parallel Jobs in Service Clouds

Bingbing Zheng, Li Pan, Dong Yuan, Shijun Liu

Tuesday 12:30PM – 2:00PM, Lunch, BALLROOM I

Tuesday 2:00PM – 3:30PM

Session 4: Edge + IoT Services I, BALLROOM II

Session Chair: Dr. Richard Hull, *IBM T.J. Watson Research Center, United States*

Latency-Aware Placement of Data Stream Analytics on Edge Computing

Alexandre da Silva Veith, Marcos Dias de Assuncao, Laurent Lefevre

Optimal Edge User Allocation in Edge Computing with Variable Sized Vector Bin Packing

Phu Lai, Qiang He, Mohamed Abdelrazek, Feifei Chen, John Hosking, John Grundy, Yun Yang

(SHORT) RA-FSD: A Rate-Adaptive Fog Service Delivery Platform

Tiehua Zhang, Jiong Jin, Yun Yang

(SHORT) A Service-based Declarative Approach for Capturing Events from Multiple Sensor Streams

Zhongmei Zhang

Session 5: Service Management I, Room SALON III

Session Chair: Prof. Philippe Lalanda, *Joseph Fourier University, France*

Hierarchical Recursive Resource Sharing for Containerized Scientific Workflows

Young Jin Kim, Young Choon Lee, Hyuck Han, Sooyong Kang

A Fuzzy-based Auto-scaler for Web Applications in Cloud Computing Environments

Bingfeng Liu, Rajkumar Buyya, Adel Nadjaran Toosi

Runtime Monitoring in Continuous Deployment by Differencing Execution Behaviour Models

Monika Gupta, Atri Mandal, Gargi Dasgupta, Alexander Serebrenik

(SHORT) Cost-Efficient and Robust Task Scheduling based on Reusing Computation in Clouds

Chavit Denninnart, Mohsen Amini Salehi, Adel Nadjaran Toosi, Xiangbo Li

Session 6: Service Engineering II, Room SALON IV

Session Chair: Prof. Liang Zhang, *Fudan University, China*

Convenience-based Periodic Composition of IoT Services

Bing Huang, Athman Bouguettaya, Azadeh Gharineiat

CrowdMashup: Recommending Crowdsourcing Teams for Mashup Development

Faisal Binzagr, Brahim Medjahed

A Variation Aware Composition model for Dynamic Web Service environments

Soumi Chattopadhyay, Ansuman Banerjee

(SHORT) A Model-Driven Framework for Automated Generation and Verification of Cloud Solutions from Requirements

Hamid R. Motahari Nezhad, Taiga Nakamura, Peifeng Yin, Adi Sosnovich, Karen Yorav

Tuesday 3:30PM – 4:00PM, Coffee Break

Tuesday 4:00PM – 5:30PM

Session 7: Service Trust and Security, BALLROOM II

Session Chair: Prof. Winfried Lamersdorf, *University of Hamburg, Germany*

Empowering Business-Level Blockchain Users with a Rules Framework for Smart Contracts

Tara Astigarraga, Xiaoyan Chen, Yaoliang Chen, Jingxiao Gu, Richard Hull, Limei Jiao, Yuliang Li, Petr Novotny

Context-Aware Trustworthy Service Evaluation and Recommendation in Social Internet of Things

Maryam Khani, Yan Wang, Mehmet A. Orgun, Feng Zhu

Cloudchain: a Blockchain-based Coopetition Differential Game Model for Cloud Computing

Mona Taghavi, Jamal Bentahar, Hadi Otrok, Kaveh Bakhtiyari

Session 8: Microservices, Room SALON III

Session Chair: Dr. Ying Zou, *Queen's University, Canada*

Microscope: Pinpoint the Abnormal Services with Causal Graphs in Micro-service Environments

Jinjin Lin, Pengfei Chen, Zibin Zheng

Architecture-based Automated Updates of Distributed Microservices

Fabienne Boyer, Xavier Etchevers, Noel de Palma, Xinxu Tao

Function-Splitting Heuristics for Discovery of Microservices in Enterprise Systems

Adambarage Anuruddha Chathuranga De Alwis, Alistair Barros, Artem P Polyvyanyy, Colin Fidge

Wednesday November 14, 2018 Detailed Program

Wednesday 8:00AM – 9:00AM, Registration

Wednesday 9:00AM – 10:30AM, BALLROOM II

Keynote 2: Distributed Trust: How Data-Driven Applications, AI and Blockchain is Impacting Service Oriented Computing

Speaker: Liming Zhu, Research Director of Software and Computational Systems Research Program, Data61, CSIRO, Australia

Session Chair: Prof. Jian Yang, *Macquarie University, Australia*

Demo Flash Talks

Speaker: Dr. Antonio Bucchiarone, *FBK, Italy*

Wednesday 10:30AM – 11:00AM, Coffee Break

Wednesday 11:00AM – 12:30PM

Session 9: Recommendation II, BALLROOM II

Session Chair: Prof. Alistair Barros, *Queensland University of Technology, Australia*

QoS-aware Web Service Recommendation with Reinforced Collaborative Filtering
Guobing Zou, Ming Jiang, Sen Niu, Hao Wu, Shengye Pang, Yanglan Gan

Unit of Work Recommendation for Generative Workflow
Jia Zhang, Maryam Pourreza

Mobile Crowdsourced Sensors Selection for Journey Services
Ahmed Ben Said, Abdelkarim Erradi, Azadeh Ghari Neiat, Athman Bouguettaya

(SHORT) RLRecommender: A representation-learning-based recommendation method for business process modeling
Huaqing Wang, Lijie Wen, Li Lin, Jianmin Wang

Session 10: Service Applications, Room SALON III

Session Chair: Prof. Sami Yangui, *CNRS LAAS, Toulouse, France*

Healthcare Application Migration in Compliant Hybrid Clouds
Anca Sailer, Bo Yang, Siddharth Jain, Angel E. Tomala-Reyes, Manu Singh, Anirudh Ramnath

DAlIM: Machine Learning Based Intelligent Lucky Money Determination for Large-Scale E-Commerce Businesses
Min Fu, Chi Man Wong, Hai Zhu, Yan Jun Huang, Yuan Ping Li, Xi Zheng, Jia Wu, Chi Man Vong, Jian Yang

A service-based approach for analytics in Industry 4.0

Philippe Lalanda, Denis Morand

(SHORT) eTOUR: A Two-Layer Framework for Tour Recommendation with Super-POIs

Chunwei Wang, Yuanning Gao, Xiaofeng Gao, Bin Yao, Guihai Chen

Session 11: Service Management II, Room SALON IV

Session Chair: Dr. Qiang He, *Swinburne University of Technology, Australia*

QKnob: A Knob-based Fairness-Efficiency Scheduler for Cloud Computing with QoS Guarantee

Shanjiang Tang, Ce Yu, Chao Sun, Jian Xiao, Yinglong Li

Energy-Efficient and Quality of Experience-Aware Resource Provisioning For Massively Multiplayer Online Games In the Cloud

Yongqiang Gao, Lin Wang, Zhulong Xie, Wenhui Guo, Jiantao Zhou

A Cost-Effective Deadline-Constrained Scheduling Strategy for a Hyperparameter Optimization Workflow for Machine Learning Algorithms

Yan Yao, Jian Cao, Zitai Ma

(SHORT) Transparently Capturing Execution Path of Service/Job Request Processing

Yong Yang, Long Wang, Jing Gu, Ying Li

Wednesday 12:30PM – 2:00PM, Lunch, BALLROOM I

Wednesday 2:00PM – 3:30PM, BALLROOM II

Panel: IoT and Service: Friends or Foes?

Moderator: Prof. Jian Yang, *Macquarie University, Australia*

Panelists:

- Prof. Alistair Barros, *Queensland University of Technology, Australia*
- Prof. Schahram Dustdar, *TU Wien, Austria*
- Prof. Michael Sheng, *Macquarie University, Australia*
- Prof. Liang Zhang, *Fudan University, China*

Wednesday 3:30PM – 4:00PM, Coffee Break

Wednesday 4:00PM – 5:30PM

Demo Session, Room SALON III

Session Chair: Dr. Antonio Bucchiarone, *FBK, Italy*

Improved Architectures/Deployments with Elmo

Arjan Lamers, Marko van Eekelen, Sung-Shik Jongmans

CEA: A Service for Cognitive Event Automation

Larisa Shwartz, Jinho Hwang, Hagen Volzer, Michael Nidd, Murilo Goncalves Aguiar, Marcos Vinicius Landivar, Paraiso Letusa Valero

BluePlan: A Service for Automated Migration Plan Construction using AI

Malik Jackson, John Rofrano, Jinho Hwang, Maja Vukovic

ELeCTRA: induced usage limitations calculation in RESTful APIs

Antonio Gamez-Diaz, Pablo Fernandez, Ana Ivanchikj, Cesare Pautasso, Antonio Ruiz-Cortes

Offering Artificial Intelligence Development Situation Analysis Service for Users

Xiujuan Xu, Yu Liu

TReAT: A Tool for Analyzing Relations between Tasks in a Process

Pengbo Xiu, Jian Yang, Weiliang Zhao

iCOP: IoT-enabled Policing Processes

Francesco Schiliro, Amin Beheshti, Samira Ghodratnama, Farhad Amouzgar, Boualem Benatallah, Jian Yang, Quan Z. Sheng, Fabio Casati, Hamid Reza Motahari-Nezhad

iSheets: A Spreadsheet-based Machine Learning Development Platform for Data-driven Process Analytics

Farhad Amouzgar, Amin Beheshti, Samira Ghodratnama, Boualem Benatallah, Jian Yang, Quan Z. Sheng

SORCER: A Decentralised Continuous Integration Platform for Service-Oriented Software Systems

Jameel Almalki, Haifeng Shen

On Anomaly Detection and Root Cause Analysis of Microservice Systems

Zijie Guan, Jinjin Lin, Pengfei Chen

RESTalk Miner: Mining RESTful Conversations, Pattern Discovery and Matching

Ana Ivanchikj, Ilija Gjorgjiev, Cesare Pautasso

slay Engine for Large-Scale SLA Management

Shashank Rajamoni, Robert Engel, Bryant Chen, Heiko Ludwig, Alexander Keller

Paving the Way for Autonomous Cars in the City of Tomorrow: A Prototype for Mobile Devices Support at the Edges of 5G Network

Fatma Raissi, Clovis Anicet Ouedraogo, Sami Yangui, Frederic Camps, Nejib Bel-Hadj Alouane,

Juno: An Intelligent Chat Service for IT Service Automation

Jin Xiao, Anup Kalia, Maja Vukovic

Session 12: Business Services and Processes, BALLROOM II

Session Chair: Prof. Shijun Liu, *Shandong University, China*

Prediction of Invoice Payment Status in Account Payable Business Process

Tarun Tater, Sampath Dechu, Senthil Mani, Chandresh Maurya

Explaining Non-Compliance of Business Process Models through Automated Planning

Fabrizio Maria Maggi, Andrea Marrella, Giuseppe Capezzuto, Abel Armas-Cervantes

A genetic algorithm for cost-aware business processes execution in the cloud

Guillaume Rosinosky, Samir Youcef, Charoy François

Wednesday 7:00PM, Gala Dinner

Thursday November 15, 2018 Detailed Program

Thursday 8:00AM – 9:00AM, Registration

Thursday 9:00AM – 10:30AM

Session 13: Social and Interactive Services, BALLROOM II

Session Chair: Prof. Francois Charoy, *University of Lorraine, France*

Crowdsourcing Task Scheduling in Mobile Social Networks

Jiahao Fan, Xinbo Zhou, Xiaofeng Gao, Guihai Chen

(SHORT) Cognitive system to achieve human-level accuracy in automated assignment of helpdesk email tickets

Atri Mandal, Nikhil Malhotra, Shivali Agarwal, Anupama Ray, Giriprasad Sridhara

(SHORT) Crowdsourcing Energy as a Service

Abdallah Lakhdari, Athman Bouguettaya, Azadeh Ghari Neiat

(SHORT) Social-Sensor Composition for Scene Analysis

Tooba Aamir, Athman Bouguettaya, Hai Dong

(SHORT) QITA: Quality Inference Based Task Assignment in Mobile Crowdsensing

Chenlin Liu, Xiaofeng Gao, Fan Wu, Guihai Chen

Session 14: Services and Processes, Room SALON III

Session Chair: Prof. Dongjin Yu, *Hangzhou Dianzi University, China*

High Performance Userspace Networking for Containerized Microservices

Xiaohui Luo, Fengyuan Ren

Supporting Architectural Decision Making on Quality Aspects of Microservice APIs

Uwe Zdun, Mirko Stocker, Olaf Zimmermann, Cesare Pautasso, Daniel Lübke

(SHORT) Adaptive Temporal Verification and Violation Handling for Time-Constrained Business Cloud Workflows

Haoyu Luo, Xiao Liu, Jin Liu, Yun Yang

(SHORT) Towards Creating Business Process Models from Images

Neelamadhav Gantayat, Giriprasad Sridhara, Anush Sankaran, Sampath Dechu, Senthil Mani, Gargi B Dasgupta

Industry Forum, Room SALON IV

Panel: Stable Data Intelligence Service in E-Commerce: Business Requirements and Applications

Moderator: Dr. Min Fu, *Alibaba Group*

Panelists:

- Wei Zhang, *Data Service Department of Business Platform Unit, Alibaba Group*
- Feijun Jiang, *AI Lab, Alibaba Group*
- Yue Wang, *Alibaba Cloud*
- Yichi Zhang, *Data Service Department of Business Platform Unit, Alibaba Group*

Thursday 10:30AM – 11:00AM, Coffee Break

Thursday 11:00AM – 12:30PM, BALLROOM II

Keynote 3: Deep Insight of End to End E-Commerce Business Management

Speaker: Jeff Zeng, Senior Staff Engineer, *Alibaba Group*

Session Chair: Prof. Jianwei Yin, *Zhejiang University, China*

Thursday 12:30PM – 2:00PM, Lunch, BALLROOM I

Thursday 2:00PM – 3:30PM

Session 15: Edge + IoT Services II, BALLROOM II

Session Chair: Dr. Jian Yu, *Auckland University of Technology, New Zealand*

Response Time Aware Operator Placement for Complex Event Processing in Edge Computing

Xinchen Cai, Hongyu Kuang, Hao Hu, Wei Song, Jian Lv

Enacting Emergent Configurations in the IoT through Domain Objects

Fahed Alkhabbas, Martina De Sanctis, Romina Spalazzese, Antonio Bucchiarone, Paul Davidsson, Annapaola Marconi

(SHORT) Energy-Delay Co-optimization of Resource Allocation for Robotic Services in Cloudlet Infrastructure

Mahbuba Afrin, Jiong Jin, Ashfaqur Rahman

(SHORT) Services in IoT: A Service Planning Model based on Consumer Feedback

Christian Cabrera, Andrei Palade, Gary White, Siobhán Clarke

Session 16: Service Analytics, Room SALON III

Session Chair: Prof. Cesare Pautasso, *University of Lugano, Switzerland*

Domain Knowledge Driven Key Term Extraction for IT Services

Prateeti Mohapatra, Yu Deng, Abhirut Gupta, Gargi Dasgupta, Amit Paradkar, Ruchi Mahindru, Daniela Rosu, Shu Tao, Pooja Aggarwal

(SHORT) An Adaptive Semi-Local Algorithm for Node Ranking in Large Complex Networks

Fanghua Ye, Chuan Chen, Jie Zhang, Jiajing Wu, Zibin Zheng

(SHORT) User Location Prediction in Mobile Crowdsourcing Services

Yun Jiang, Wei He, Lizhen Cui, Hua Lu

(SHORT) Leveraging Regression Algorithms for Predicting Process Performance using Goal Alignments

Karthikeyan Ponnalagu, Aditya Ghose, Hoa Dam

(SHORT) Using Machine Learning to Provide Differentiated Services in SDN-like Publish/Subscribe Systems for IoT

Yulong Shi, Yang Zhang, Hans-Arno Jacobsen, Bo Han, Mengxi Wei, Junliang Chen

Thursday 3:30PM, The Closing Ceremony, BALLROOM II

Monday November 12, 2018 Detailed Program

Monday 8:00AM – 9:00AM, Registration

Monday 9:00AM – 10:30AM

DDBS: Data-Driven Business Services

Session I, Room SALON I

Session Chair: Yuanchun Jiang, *Hefei University of Technology, China*

A data-driven optimization method for reallocating the free-floating bikes

Ming Liu, Xifen Xu

Study on Airport De-icing Schedule Problem Balancing Fairness and Efficiency

Qing Guo, Bing Li, Xuan Luo

Co-Design of Business and IT services - a Tool-Supported Approach

Blagovesta Pirelli, Natalia Nessler, Gorica Tapandjieva, Alain Wegmann

NLS4IoT: Networked Learning Systems for Secured IoT Services and Its Applications

Session I, Room SALON II

Session Chair: Frank Jiang, *University of Technology, Australia*

Study on a kind of Erbium Doped Fiber Amplifier

Fan Gao, Ye Lu, Chuanqi Li

Analysis and design of CMOS fully differential telescopic operational amplifier with common mode feedback

Zhongqiu Pang, Pinqun Jiang, Shuxiang Song, Mingcan Cen

Parallel Concatenate Network with Residual Structure for Image Recognition

Peng Li, Pinqun Jiang, Shangyou Zeng, Rui Fan

CIoTS: Context-Aware and IoT Services

Session I, Room SALON III

Session Chair: Jian Yu, *Auckland University of Technology, New Zealand*

Augmented Reality in IoT

Gary White, Christian Cabrera, Andrei Palade, Siobhan Clarke

The Tentative Research of Hydrologic IoT Data Processing System Based on Apache Flink

Feng Ye, Zhijian Wang, Hu Cheng, Yong Chen

Runtime Service Composition Modification Supporting Situational Sensor Data Correlation

Chen Liu, Zhongmei Zhang, Shouli Zhang, Yanbo Han

ASOCA: Adaptive Service-Oriented and Cloud Applications &

ISyCC: IoT Systems for Context-aware Computing

Session I, Room SALON IV

Session Chair: Khalil Drira, LAAS-CNRS and Univ. de Toulouse, France

Dynamic Task Allocation for Data-Intensive Workflows in Cloud Environment

Xiping Liu, Liyang Zheng, Junyu Chen, Lei Shang

A Data Dependency and Access Threshold Based Replication Strategy for Multi-Cloud Workflow Applications

Fei Xie, Jun Yan, Jun Shen

Support Context-Adaptation in the Constrained Application Protocol (CoAP)

Dong Yuji, Wan Kaiyu, Yue Yong, Huang Xin

Monday 10:30AM – 11:00AM, Coffee Break

Monday 11:00AM – 12:30AM

DDBS: Data-Driven Business Services

Session II, Room SALON I

Session Chair: Yuanchun Jiang, Hefei University of Technology, China

Energy-aware and Location-constrained Virtual Network Embedding in Enterprise Network

Cong Xin, Zi Lingling, Shuang Kai

WeChat Red Envelops: Literature Review and Future Directions

Zerun Chen, Rui Gu

NLS4IoT: Networked Learning Systems for Secured IoT Services and Its Applications

Session II, Room SALON II

Session Chair: Frank Jiang, University of Technology, Australia

Application of System Call in Abnormal User Behavior Detection in Social Network

Shizhen Zhang, Frank Jiang, Min Qin

Multi-branch Aggregate Convolutional Neural Network for Image Classification

Rui Fan, Pinqun Jiang, Shangyou Zeng, Peng Li

Remote Sensing Image Deblurring Algorithm Based on WGAN

Haiying Xia, Chenxu Liu

CIoTS: Context-Aware and IoT Services

Session II, Room SALON III

Session Chair: Jian Yu, *Auckland University of Technology, New Zealand*

A Service-based Approach to Situational Correlation and Analyses of Stream Sensor Data

Liu Yang, Yi Li, Zhongmei Zhang

A Cost-Effective Time-Constrained Multi-Workflow Scheduling Strategy in Fog Computing

Ruimiao Ding, Xuejun Li, Xiao Liu, Jia Xu

Monday 12:30PM – 2:00PM, Lunch, Room WEST LAKE II

Monday 2:00PM – 3:30PM

ADMS: AI and Data Mining for Services

Session I, Room SALON I

Session Chair: Anup Kalia, *IBM T. J. Watson Research Center, United States*

Fast Nearest-Neighbor Classification using RNN in Domains with Large Number of Classes

Gautam Singh, Gargi Dasgupta, Yu Deng

TaxiC: A Taxi Route Recommendation Method based on Urban Traffic Charge Heat Map

Yijing Cheng, Qifeng Zhou, Yongxuan Lai

Event Log Reconstruction Using Autoencoders

Hoang Thi Cam Nguyen, Marco Comuzzi

NLS4IoT: Networked Learning Systems for Secured IoT Services and Its Applications

Session III, Room SALON II

Session Chair: Frank Jiang, *University of Technology, Australia*

A new blockchain-based malware detection in Android platform

Fei Gao

Text Classification Research Based on Improved Word2vec and CNN

Mengyuan Gao, Tinghui Li

Retinal image registration based on bifurcation point and SURF

Haiying Xia, Danhua Chen

CIoTS: Context-Aware and IoT Services

Session III, Room SALON III

Session Chair: Jian Yu, *Auckland University of Technology, New Zealand*

Real-time Estimation of Road Traffic Speeds from Cell-based Vehicle Trajectories

Xiaoxiao Sun, Dongjin Yu, Sai Liao, Wanqing Li, Chengbiao Zhou

A Data Cleaning Service on Massive Spatio-temporal Data in Highway Domain

Yanqing Xia, Xuefei Wang, Weilong Ding

An Efficient in-Memory R-tree Construction Scheme for Spatio-temporal Data Stream

Liang Huai Yang

PhD Symposium

Session I, Room SALON IV

Moderator: Prof. Zhongjie Wang, *Harbin Institute of Technology, China*

Service Negotiation in a Dynamic IoT Environment

Fan Li

Towards Energy and Time Efficient Resource Allocation in IoT-Fog-Cloud Environment

Huaiying Sun, Huiqun Yu, Guisheng Fan

AppNet: A Large-Scale Multi-layer Heterogeneous Complex App Network for Intelligent Program Search

Jianmao Xiao, Shizhan Chen, Zhiyong Feng, Jian Yang

Monday 3:30PM – 4:00PM, Coffee Break

Monday 4:00PM – 5:30PM

ADMS: AI and Data Mining for Services

Session II, Room SALON I

Session Chair: Anup Kalia, *IBM T. J. Watson Research Center, United States*

MLE: a General Multi-Layer Ensemble Framework for Group Recommendation

Xiaopeng Li, Bin Xia

(SHORT) Does your accurate process predictive monitoring model give reliable predictions?

Marco Comuzzi, Alfonso E. Marquez-Chamorro, Manuel Resinas2

CIoTS: Context-Aware and IoT Services

Session IV, Room SALON III

Session Chair: Jian Yu, *Auckland University of Technology, New Zealand*

A Brief Survey on IoT Privacy: Taxonomy, Issues and Future Trends

Kinza Sarwar, Sira Yongchareon, Jian Yu

Tracking a Person's Behaviour in a Smart House

Gavin Chand, Mustafa Ali, Bashar Barmada, Veronica Liesaputra, Guillermo Ramirez-Prado, Sira Yongchareon

PhD Symposium

Session II, Room SALON IV

Moderator: Prof. Zhongjie Wang, *Harbin Institute of Technology, China*

A Goal-Driven Context-Aware Architecture for Distributing Cognitive Service Group

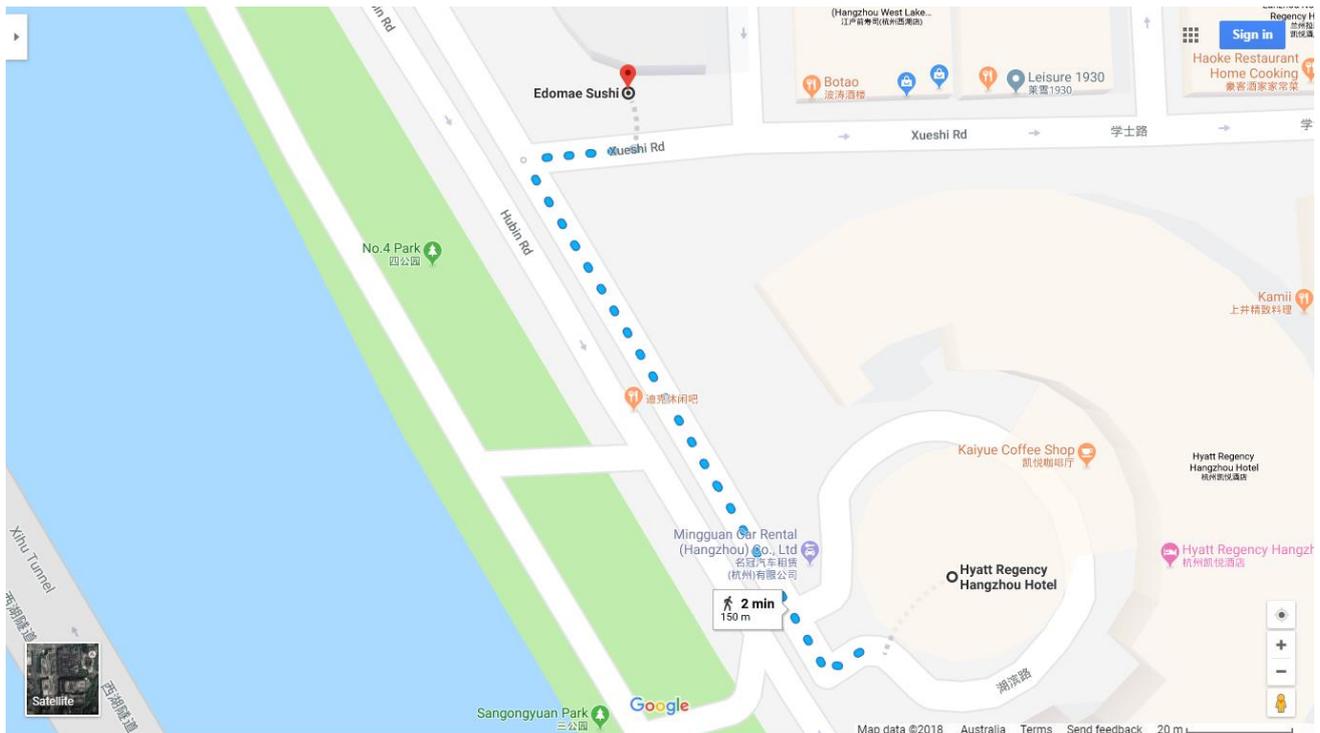
Siyuan Lu

Crossover Service Phenomenon Analysis based on Event Evolutionary Graph

Mingyi Liu

Reception

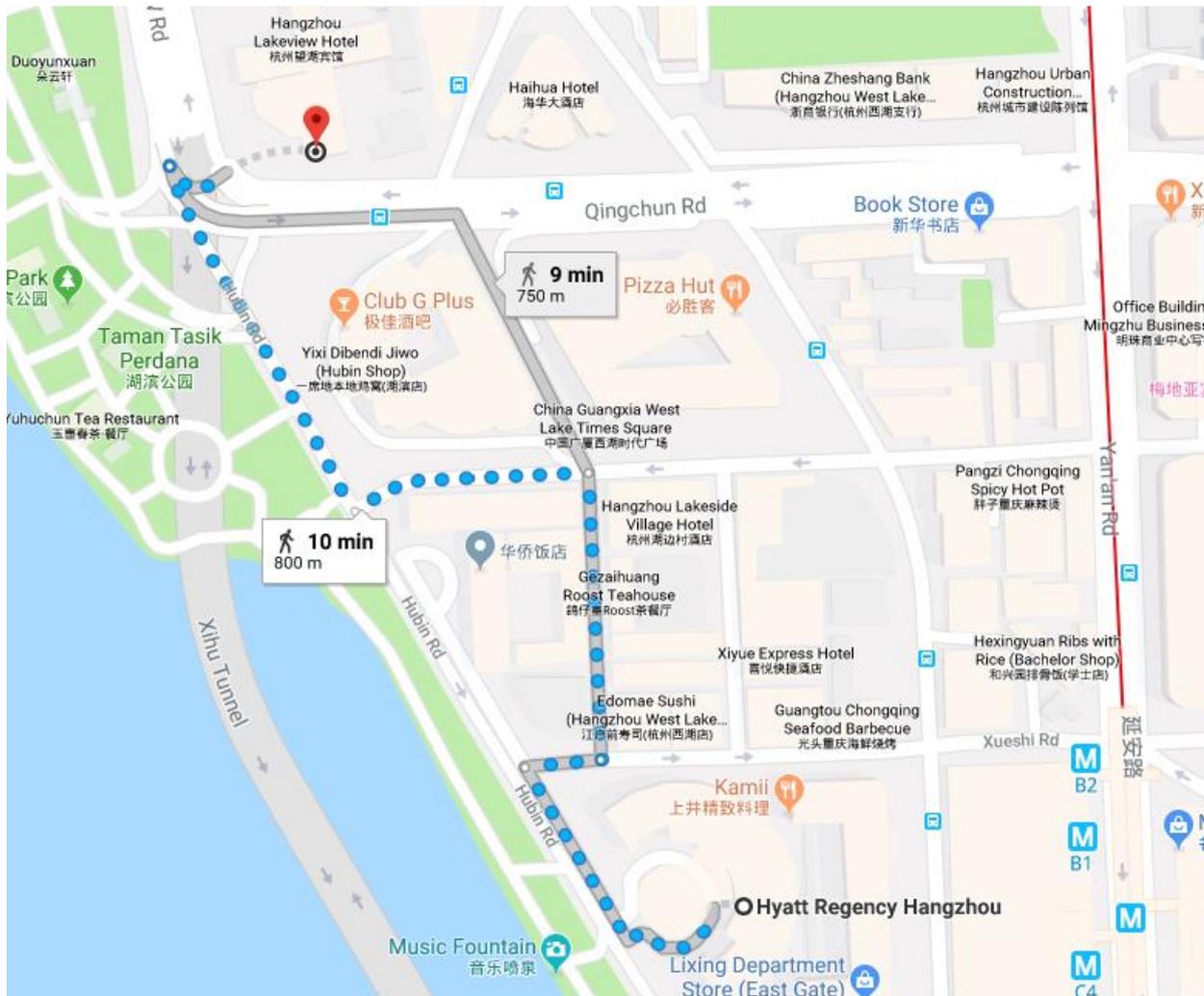
Monday, November 12, 7:00PM – 9:30PM
JiaJiang Coffee, #33 Hubin Rd., Hangzhou



Banquet

Wednesday, November 14, 7:00PM – 9:30PM

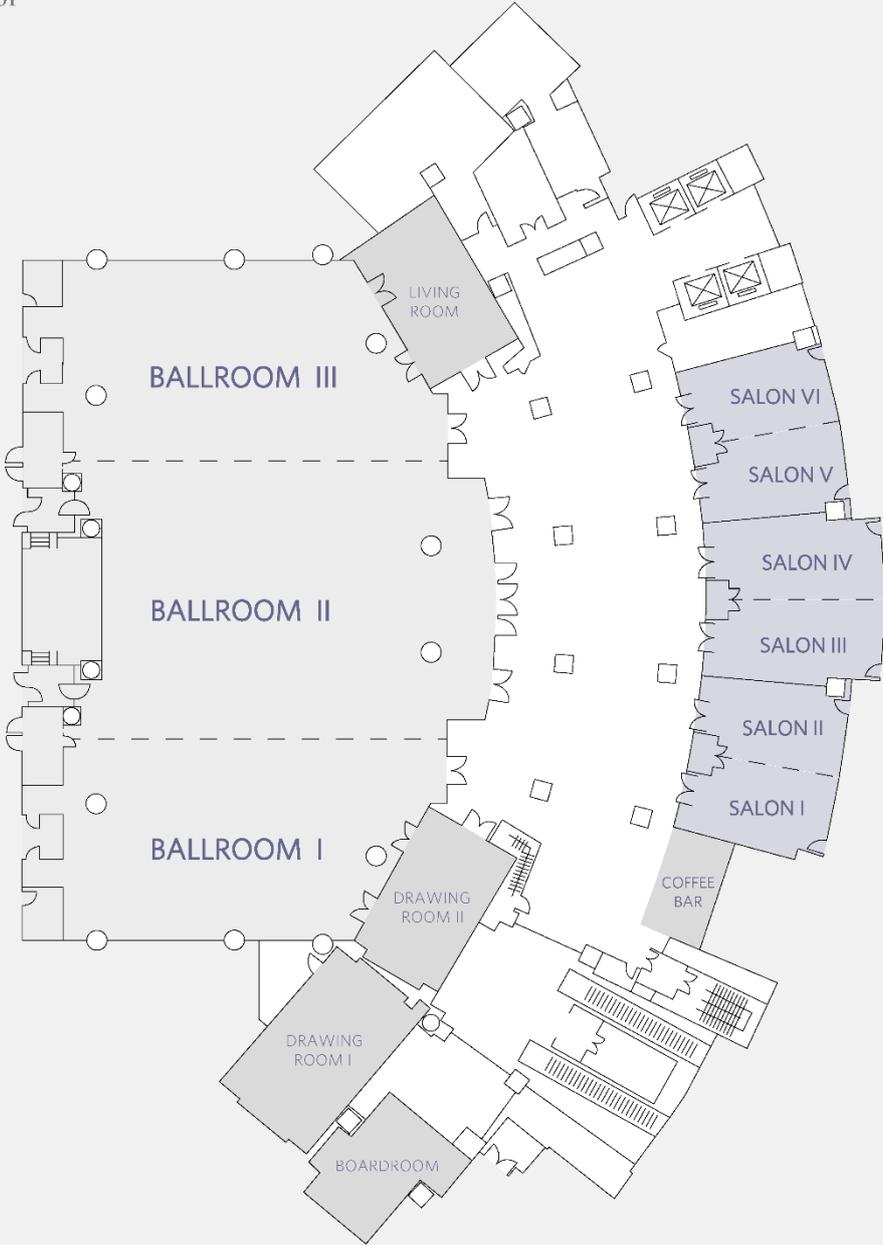
Deefly Lake View Hotel, #2 Huangcheng Rd. (West), Hangzhou



Venue Plan

FLOOR PLAN

Event floor



Transportation to Hangzhou

By Air

Xiaoshan International Airport (HGH) is the urban airport of Hangzhou. Domestic air lines are operated between Hangzhou and almost all major cities in China. Alternatively, the participants can transfer to the Hangzhou airport via Beijing or Hong Kong International airports. Possible flight routes are listed as below:

- Any Other Cities -> Hangzhou Xiaoshan International Airport (HGH)
- Any Other Cities -> Beijing Capital International Airport (PEK) -> Hangzhou Xiaoshan International Airport (HGH)
- Any Other Cities -> Hong Kong International Airport (HKG) -> Hangzhou Xiaoshan International Airport (HGH)

For your convenience, we display several international flight routes to Hangzhou:

- Direct Flight: San Francisco (USA) -> Hangzhou (or transfer via Hongkong / Beijing)
- Direct Flight: Los Angeles (USA) -> Hangzhou (or transfer via Hongkong / Beijing)
- Direct Flight: Tokyo (Japan) -> Hangzhou
- Direct Flight: Singapore -> Hangzhou
- Direct Flight: Seoul (South Korea) -> Hangzhou
- New York City (USA) -> San Francisco / Beijing / Guangzhou -> Hangzhou
- Vancouver (Canada) -> Beijing / Xiamen / Hongkong -> Hangzhou
- Paris (France) -> Hongkong / Beijing -> Hangzhou
- Amsterdam (Denmark) -> Hongkong / Beijing / Guangzhou -> Hangzhou
- Sydney (Australia) -> Hongkong / Beijing -> Hangzhou
- Melbourne (Australia) -> Guangzhou / Hongkong -> Hangzhou

By Train

The high-speed railway is the most efficient means of transportation between Hangzhou and Shanghai. It takes only 50 minutes from Shanghai Hongqiao Railway Station (which locates within the same transportation complex with Shanghai Hongqiao Airport) to Hangzhou East Railway Station, and the train departs for approximately every 15 minutes.

By Shuttle Bus / By Car

If landing on Shanghai Pudong Airport (PVG), the participants can also choose to take the shuttle bus or rent a vehicle at the airport. It takes about 3 hours from PVG airport to the central part of Hangzhou urban area by bus or car.

ICSOC 2018 Program Venue

Venue: Hyatt Regency Hangzhou

Address: #28 Hubin Road, Hangzhou



Transportation:

From Xiaoshan International Airport (HGH)

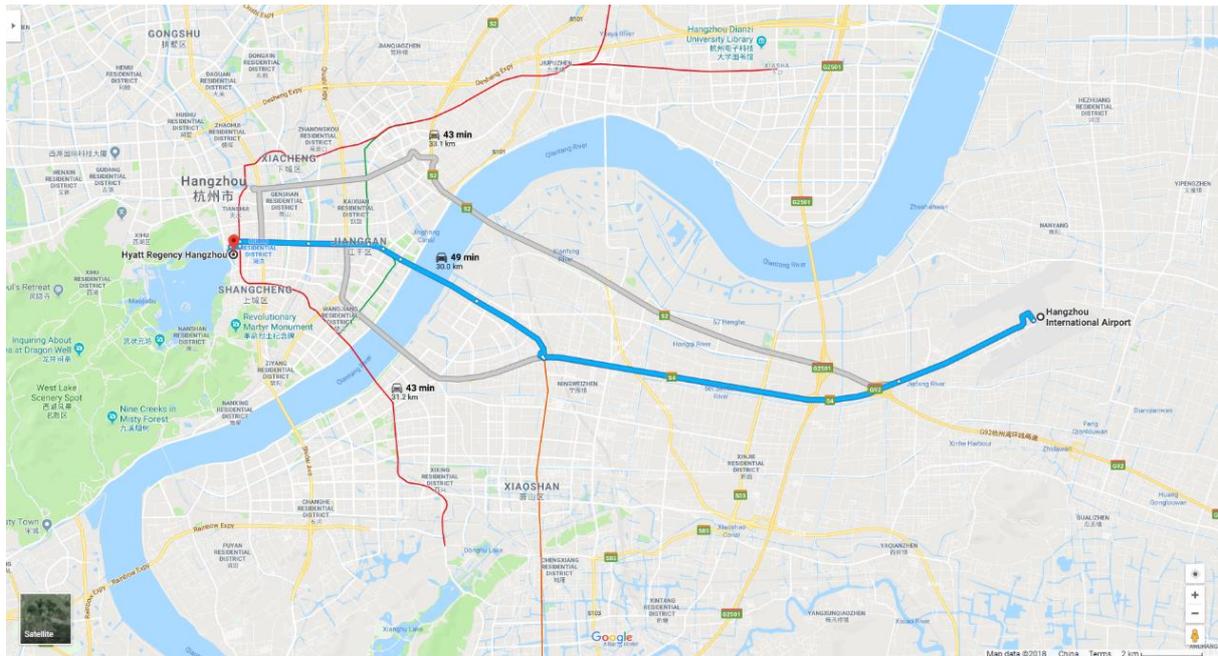
Distance: 30.0 KM EAST to Hotel

1. By Taxi

- Taxi Charge (one way): About 100.00 CNY
- Time by Taxi: 60-70 minutes

2. By Air Bus (Line Pinghailu, 平海路线) and Metro

- Direction: Grand Metropark Hotel (维景国际大酒店). Stop: Hangzhou Railway Station (城站火车站)
- Time by Air Bus: About 60 minutes. Schedule: First bus at 4:45 am, last bus at 8:45 pm, run every half hour
- Walking to subway station (Name: Hangzhou Railway station), about 200m
- Subway (Line 1) Direction: Linping (临平). Stop: Longxiangqiao (龙翔桥), Exit B
- Time by Metro Line 1: About 5 minutes
- Walking to Hotel: Head west on Xueshi Road (学士路) about 300m. Turn left and keep walking about 100m.



From Hangzhou East Railway Station

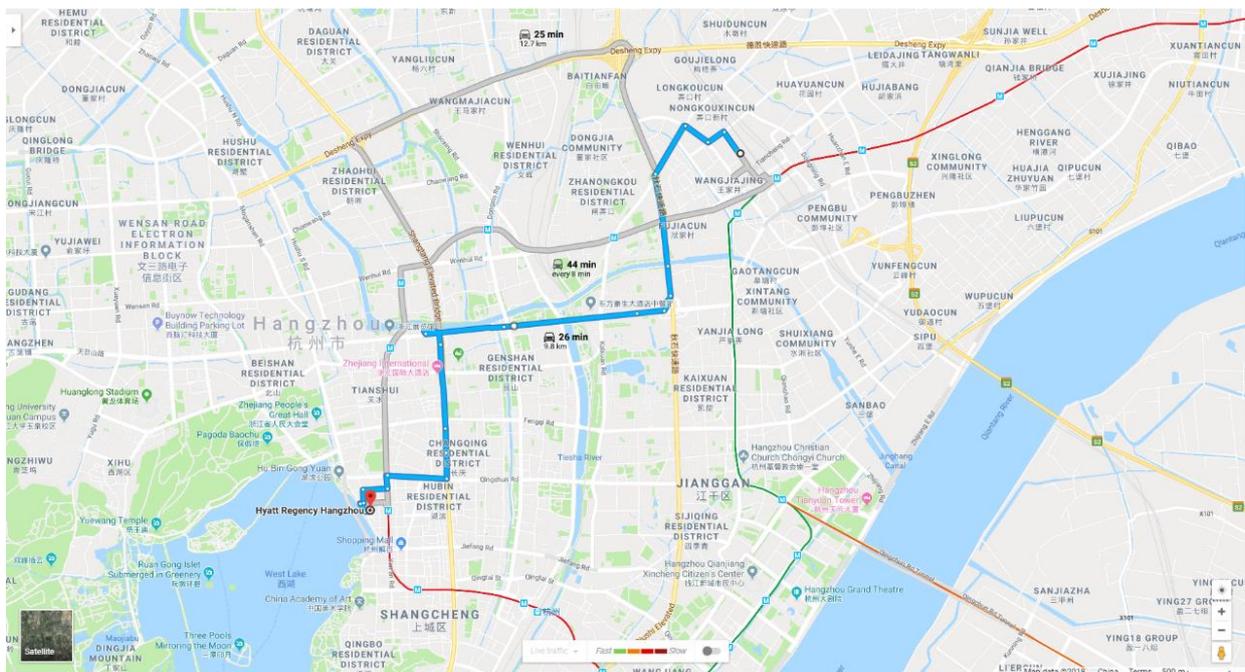
Distance: 9.0 KM NORTH EAST to Hotel

1. By Taxi

- Taxi Charge (one way): About 25.00 CNY
- Time by Taxi: 30-40 minutes

2. By Metro (Metro Line 1)

- Subway (Line 1) Direction: Xianghu (湘湖). Stop: Longxiangqiao (龙翔桥), Exit B
- Time by Metro Line 1: About 15 minutes
- Walking to Hotel: Head west on Xueshi Road (学士路) about 300m. Turn left and keep walking about 100m.



Phrasebook

Could you please take me to Hyatt Regency Hangzhou (Conference Hotel, No. 28, Hubin Rd.)?

请载我到凯悦酒店（湖滨路 28 号）

Could you please take me to Xinqiao Hotel (No. 226, Jiefang Rd.)?

请载我到新侨饭店（解放路 226 号）

Could you please take me to Renhe Hotel (No. 86, Youdian Rd.)?

请载我到仁和饭店（邮电路 86 号）

Could you please take me to Overseas Chinese Hotel (No. 39, Hubin Rd.)?

请载我到华侨饭店（湖滨路 39 号）

Can I pay it using credit card?

我能使用国际信用卡支付吗？

Can I have the receipt?

请给我发票

Could you tell me where am I now?

请告诉我，我现在在哪里（靠近什么路和什么路交叉口）？

Any help for police, please call 110

Attractions

Impression West Lake (recommended)

Strong history and culture to the West Lake and the beautiful natural scenery as a source of creativity, in-depth digging Hangzhou, an ancient folk tales, myths, cultural and historical representation of the elements of the West Lake to reproduce the same time, re-use of high-tech way, "West Lake Rain", from a side of West Lake and West Lake in the rain to reflect the natural charm of the rain. The entire landscape Virtual performances, through dynamic interpretation, realistic reproduction of the Hangzhou City connotation and condensed into a natural landscape to a high standard of art in the world, introduced to the world.



How do I participate?

- **Extra payment**
- **Price:** 380CNY (about Euro 48, US\$ 55) for VIP stand
- **Show time:** 7:30 pm, November 13 (about 1 hour)
- **Registration deadline & place:** 12:00pm, November 12 at check-in desk
- **How to get there:** local organization will arrange buses to the scene
- **Address:** junction of Yang Gong causeway and Beishan Road, opposite to the Yue Fei Temple

Landmarks

- Lingyin Temple
- Lingyin Temple is in a long, narrow valley between Fei Lai Feng and North Peak to the northwest of West Lake. The temple is without doubt a premier showpiece in the West Lake environs and is notable as one of the 10

most famous Buddhist temples of China.

- Six Harmonies Pagoda

Six Harmonies Pagoda is located at the foot of Yuelun Shan (Yuelun Hill) overlooking the Qiantang River. The pagoda was reputedly built as a navigational aid and as a way of calming the waters of the Qiantang River. The shape was modified during the Ming and Qing Dynasties.

- He Fang Street

Located in Wushan Square, He Fang Street is an old, well-designed pedestrian street that is the epitome of ancient Hangzhou. Shops selling arts and crafts, souvenirs, and silk; tea houses; and restaurants line both sides of the street.

- Hu Qing Yu Tang

Located at the foot of Wushan Hill is an ancient and magnificent architectural complex—the Hu Qing Yu Tang drugstore. The whole drugstore, featuring the garden-inspired architecture of southern China, was designed and finally completed in 1874 by Hu Xueyan.

Museums

- China National Tea Museum

The China National Tea Museum focuses on tea and its culture, and is clustered around the tea plantations. Inside the museum, the flower corridors, fake hills, ponds, and waterside pavilions are well integrated, creating a clean atmosphere where visitors can feel close to nature.

- China National Silk Museum

The China National Silk Museum is the first state-level professional silk museum in China, as well as the largest silk museum in the world. People can also choose their favorite silk goods from the museum shop and relax in the tea house.

- Zhejiang Art Museum

The Zhejiang Art Museum is set in a geomantic, treasured site, with West Lake in front and Mt. Jade Emperor (Mt. Yuhuang) to the rear. Designed by one of China's master architects, Mr. Cheng Taining, the museum has the style of a local ethnic building with sloping ceilings in black and white.

Shows and Performances

- Impression West Lake

Performances of "Impression West Lake," a unique metropolitan outdoor show on the most natural stage in the world, are set on the wavy, mellow, and ever-changing West Lake, ensuring that the performance appears vivid and natural.

- The Romance of the Song Dynasty

"The Romance of the Song Dynasty" is based on the historic stories and legends of the city of Hangzhou and is one of the "World's Top Three Famous Shows."

Scenes of West Lake

Each view in West Lake has its own feature, when combining together, they also can be on behalf of the essence

of the beauty of ancient West Lake. Ten Views of the West Lake were formed in the Southern Song Dynasty, and basically are distributed around the West Lake, some are located on the lake, they are:

- Autumn Moon over the Peaceful Lake - Chinese: 平湖秋月

Autumn Moon over the Calm Lake is one of the top ten views of the West Lake in Hangzhou. It is located in the western end of Baiti Causeway, near to the Isolated Hill. It is closed to the outer West Lake. At the edge of the lake, overlooking the Moon on high site can make you acquire the sense of quiet in the West Lake, washing irritable mood. It covers an area of over 6000 square meters.

Why Autumn Moon over the Calm Lake is famous

There is a scientific reason for why Autumn Moon over the Calm Lake is famous. Hangzhou is located in the subtropical area. According to the earth and the sun operating laws, four seasons in this city is distinct clearly; according to the relation of the earth and the moon, chord circle hook does have a pattern. In autumn, the moon from is closer to the northern hemisphere in earth. Because of Hangzhou's geographical location, the angle between the moon and the earth does not exceed 60 degrees. What's more, the weather is mainly sunny in autumn evening in Hangzhou and the temperature is about 20 degrees Celsius. The relative humidity is 80%, wind speed three meters to four meters per second. There are little particulates in the air. The pleasant climate at this time makes the moon seem to be particularly large, bright and especially round.

- Evening Bell at Nanping Hill - Chinese: 南屏晚钟

Located on the south side of West Lake, Evening Bell at Nanping Hill is one of top ten views of the west lake with the longest history. It is a mixture of cultural and natural views. It refers to the evening bells in Jingci Temple at Nanping Hill in Hangzhou. Due to the caves at Nanping Hill, when the sun is down and the bell rings, the sound of the bell will echoes in the valley for a long time. This is why this place is so famous. In recent years, when the New Year comes, foreign guests, overseas Chinese and native residents in Hangzhou gather at the bell tower in Jingci Temple to strike the huge bell for New Year blessings.

The Scene of Evening Bell Ringing at the Nanping Hill is mainly consisted of two parts: Nanping Hill Scenic Area and Jingci Temple. The two portions are specially and vividly characterized of its beautiful of natural scene and religion culture.

- Curved Yard and Lotus Pool in Summer - Chinese: 曲院风荷

Located in the west side of West Lake, Curved Yard and Lotus Pool in Summer (Qufeng Heyuan) is famous for the beautiful scenery in summer. It ranks second among top ten views of the West Lake in Hangzhou. The total area of this place is 126,500 square meters, including a construction area of 2.68 billion square meters. This place mainly includes two parts: the lotus lake and the crooked courtyard. The crooked courtyard is located in site where Jinsha Stream (largest natural water source in West Lake) flows into West Lake, near to the Hongchun Bridge in Hongyin Road. It used to be a wine shop in South Song Dynasty. Near the banks of West Lake grows lotus. When summer comes, the flavor of the lotus and the perfume of the wine together can be smelled everywhere.

- Melting Snow at Broken Bridge- Chinese: 断桥残雪

It is famous for the looming view of the bridge seen from the distance when there is winter snow. The broken bridge is located in the eastern end of Baidi in the West Lake in Hangzhou, backed Baoshi Mountain, facing the city of Hangzhou. It is the watershed point of outer West Lake and inner West Lake.

With a high location and broader vision, Melting Snow at Broken Bridge is the best place to appreciate the

snow scenery in winter. When it snows, standing on the hill south and overlooking southwards, the West Lake is clad in silvery white. The stone arch bridge without shelter reveals its mottled face when ice and snow melt in the sun. However, both ends of the bridge are still under snow cover. The bridge is vaguely seen and snow in the culverts is light, which is contrasted to the gray bridge. That seems to break the non-breaking, it is so called broken bridge.

- Orioles Singing in the Willows - Chinese: 柳浪闻莺

Orioles Singing in the Willows ranks fifth among the top ten views of the West Lake. It is located in the eastern side of West Lake in Hangzhou. Covering an area of over 20 square meters, it is near the city by the lake, being a large integrated garden with ornamental and entertainment functions. The attraction, Orioles Singing in the willows, is divided into Friendship, Wen Ying, Ju Jing, South Park four parts. The willows grow together with purple nanmu, cedar, magnolia, plum and other different trees and flowers. In Southern Song Dynasty, it is the largest imperial garden, called Ju Jing Garden. At that time there was a Huifang Hall and three houses and nine pavilions, and Liu Lang Bridge and Bachelor Bridge. It was named Orioles Singing in the Willows for oriole flying and crowing in the willows. When the spring comes, thousands of willows waving in the breeze like waves in the sea; in shade depths, from time to time come the sound of orioles.

- Spring Dawn at Su Causeway - Chinese: 苏堤春晓

Spring Dawn at Su Causeway ranks first among ten views of the West Lake in Hangzhou. It is a north-south tree-lined embankment running through the West Lake scenic area. The embankment is south to the foothills of Nanping Mount and north to the Xixia Ridge. The embankment is 300 kilometers long and 36 meters wide. It is built by Su Dongpo, who is a writer and calligrapher in Northern Song Dynasty. In 1089, Su used the mud of the West Lake to build the embankment when he was dredging the lake. There are six stone arch bridges along the embankment, from south to north are the Central Wave Bridge (Yangbo Bridge), Suo Lan Bridge, Wang Shan Bridge, Ya Ti bridge, Dongpu Bridge, Kua Hong Bridge. Su Causeway is named in honor of Su Dongpo, also known as Su Gong Causeway. In the south end of the causeway lies a Su Dongpo Memorial, which shows the life of Su Dongpo and his poems.

Su Causeway provides visitors with changing touring lines which can take a leisure stroll with an impressive view. Walking in the embankment or bridge, scenic view expands like a picture with kinds of style and fancy taste.

- Viewing Fish at Flower Harbor - Chinese: 花港观鱼

Located in the southwest of the West Lake, Viewing Fish at Flower Harbor features flowers, harbor and fishes. There are thousands of red carps in the fishpond here. And feeding red carp is a pleasure for native residents.

Flower Harbor covers an area of twenty hectares and the whole garden is divided into five parts: red carps pond, peony garden, flower harbor, large lawn and jungle. Red carp pond is located in south central park it is the center of the tour area in the whole garden. The shore of the pond is naturally tortuous. There are small bridges above the water for visitors to have a close look at the red carps. When the visitors stand on the bridge, thousands of red carp will swim towards the visitors, gaming and dancing. Peony garden is in the center of Viewing Fish at Flower Harbor. Here grows a large number of peonies, which make it a traditional public leisure venue in Hangzhou.

- Leifeng Pagoda in the Sunset - Chinese: 雷峰夕照

This scene is known for the sunset glowing shining on Leifeng Pagoda, which looks like Buddha's light shining.

- Two Peaks Piercing the Clouds - Chinese: 双峰插云

The two peaks are South High Peak and North High Peak. This scene is to describe the beautiful landscape reaching high into the air in a far.

Shopping

- Wushan Night Market

The Wushan Night Market is located on Wushan Road, starting at the junction of Huixin and Renhe Roads. The market offers a variety of items and gifts for young and old. Since the late 1990s, it has gradually become known for selling all kinds of major commodities.

- Hangzhou Tower

Located in the commercial core block, Wulin Square includes shopping, dining, entertainment, and convention and exhibition facilities. In addition to the world-class luxury brands, Hangzhou Tower also features a financial centre, fine dining, and other sophisticated lifestyle attractions.

- Hangzhou MIXC

Hangzhou MIXC is a large-scale mixed-use development located in the city's central business district and represents a sophisticated lifestyle. With multiple functions, including retail, leisure, food and beverage, entertainment, and office facilities, it has brought together a number of international luxury brands, as well as the first IMAX theatre in Hangzhou.

- Hangzhou Intime

This group of merchandise stores includes three Intime in Hangzhou stores, namely Wu Lin Intime, West Lake Intime, and Qing Chun Intime, which feature department stores and leisure and food facilities in one comprehensive retail complex

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