2016 IEEE International Conference on Data Science in Cyberspace

June 13-16, 2016 • Changsha, Hunan, China

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IEEE Technical Committee on Scalable Computing

IEEE Computer Society

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2016 IEEE International Conference on Data Science in Cyberspace

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IEEE DSC 2016 Program At a Glance

Changsha China June 13-16, 2016

Keynote Lecture: ***60 minutes*** (about 45 minutes for talk and 15 minutes for Q and A)
Main conference paper: ***25 minutes*** (about 20 minutes for talk and 5 minutes for Q and A)

June 12	
14:00-20:00	**Registration (Location: Lobby)**
June 13 – 16	
7:30-18:00	**Registration (Location: Lobby)**

Monday, June 13, 2016 (Workshop Day)						
Time	**Mediterranean Conference Hall**	**Vecchio Room**	**Sicilia Room**	**Lazio Room**	**Veneto Room**	**Pisa Room**
8:30-9:30		BDBA 2016 (Big Data and Business Analytics)	OSWD2016 (Open Source Web Data)	DV2016 (Workshop on Data Visualization)	SMP 2016 (Workshop on Social Media Processing)	HENA2016 (The 2nd workshop of Heterogeneous Information Network Analysis and Applications)
9:30-10:30	**Tutorial 1:** Privacy Preserving Data Publishing: From K-Anonymity to Differential Privacy ***Xiaokui Xiao***, *Nanyang Technological University*					
10:30-10:40	**Coffee Break**					
10:40-12:10	**Tutorial 1 (cont'd)**	BDBA 2016**(cont'd)**	OSWD2016**(cont'd)**	DV2016**(cont'd)**	SMP 2016**(cont'd)**	HENA2016**(cont'd)**
12:10-13:30	**Lunch (Location: San Marco Western Dining Room)**					
13:30-14:00		DASSC2016 (Data Analysis and Security in Smart City)	BS 2016 (The 1st International Workshop on Big Search)	IDSN2016 (The First International Workshop on Information Diffusion in Social Networks)	SMP 2016 **(cont'd)**	
14:00-15:00	**Tutorial 2:** Social Media Mining and Analysis for Business Innovation ***Feida Zhu***, *Singapore Management University*					
15:00-15:10	**Coffee Break**					

15:10-15:40	**Tutorial 2 (cont'd)**	DASSC2016 **(cont'd)**	BS 2016**(cont'd)**	IDSN2016 **(cont'd)**		
15:40-17:25			**15:45** Industrial track (Huawei)		**15:40** SRS2016 (The First International Workshop on Social Recommendation Systems)	
18:00-19:00	**Dinner(Location: San Marco Western Dining Room)**					
19:00-21:30	**Tutorial 3 (Location: Mediterranean Conference Hall):** Towards Interactive Spatial Data Analytics ***Feifei Li**, University of Utah*					

Tuesday, June 14, 2016				
Time	**Sessions**		**Chair**	**Venue**
09:00-9:30	**Opening and Welcoming Speech:** - Welcome Speech from General Chairs: **Binxing Fang** and **Philip S Yu** - Welcome Speech from University Administration		**Jinjun Chen**	**Venice International Conference Center**
9:30-9:40	**Coffee Break**			
9:40-10:40	**Keynote 1:** Large Scale Metric Learning using Locality Sensitive Hashing ***Ramamohanarao Kotagiri FIEAust**, University Melbourne*		**Binxing Fang**	**Venice International Conference Center**
10:40-10:50	**Coffee Break**			
10:50-11.50	**Keynote 2:** Transparent-Computing based Intelligent Terminals and Their Applications ***Yaoxue Zhang**, Central South University China*		**Binxing Fang**	**Venice International Conference Center**
12:00-13:30	**Lunch(Location: San Marco Western Dining Room)**			
	Lazio Room	**Vecchio Room**	**Sicilia Room**	
13:30-15:00	**S1:** Network Security ***Co-chairs:** Guo Li and Aiping Li*	**S2:** Learning and Mining ***Co-chairs:** Zhiyong Peng and Shuqiang Yang*	**S3:** Social Network Analysis 1 ***Co-chairs:** Jiuming Huang*	
15:00-15:10	**Coffee Break (Poster)**			
15:10-16:50	**S1(cont'd)** ***Co-chairs:** Yi Han and Weihong Han*	**S2(cont'd)** ***Co-chairs:** Xiaokui Xiao and Rong Jian*	**S3(cont'd)** ***Co-chairs:** Heyang Huang and Bing Wu*	
18:00	**Reception (Location: Venice International Conference Center)**			

Wednesday, June 15, 2016			
Time	**Sessions**	**Chair**	**Venue**
9:00-10:00	**Keynote 3:** From Big Data to Big Knowledge: Knowledge Engineering with Big Data ***Xindong Wu****, University of Vermont*	**Philip S Yu**	**Venice International Conference Center**
10:00-10:10	**Coffee Break (Posters)**		
10:10-11:10	**Keynote 4:** On Application-Aware Information Extraction for Big Data in Social Networks ***Ming-Syan Chen****, National Taiwan University*	**Philip S Yu**	**Venice International Conference Center**
11:15-12:15	**Panel:** "Big Data meets Deep Learning: Opportunities or Threat?" **Panelist:** Wu Xindong (Univ. of Vermont), Zhang Jun (South China Univ. of Technology), Gong Zhiguo (Univ. of Macau), Zhang Yanchun (Univ. of Victoria)	**Qing Li**	**Venice International Conference Center**
12:15-13:30	**Lunch(Location: San Marco Western Dining Room)**		

	Lazio Room	**Vecchio Room**	**Sicilia Room**
13:30-15:00	**S4:** Social Network Analysis 2 ***Co-chairs:*** *Chuan Shi and JieTang*	**S5:** QA and Natural Language Processing ***Co-chairs:*** *Hongli Zhang,and Weizhe Zhang*	**S6:** Storage, Network, graph and visualization ***Co-chairs:*** *Yuxiao Li and Shuqiang Jiang*
15:00-15:10	**Coffee Break**		
15:10-16:50	**S4(cont'd)** ***Co-chairs:*** *Li Pan and Liang Gan*	**S5(cont'd)** ***Co-chairs:*** *Xi Zhang and Qing Li*	**S6(cont'd)** ***Co-chairs:*** *Jinjun Chen and Changjun Hu*

	Event	**Chair**	**Venue**
18:00-21:00 **Closing Ceremony &Banquet**	18:00-18:30 **Beverage Party**	**Yi Han**	**Mediterranean Conference Hall**
	18:30-19:00 **Closing Ceremony:** - Speech from PC Co-chair Jinjun Chen - Best Paper Prize Presentation - Introduction to the Organizer of Next DSC Conference	**Yan Jia**	**Venice International Conference Center**
	19:00 **Banquet**	**Yi Han**	**Venice International Conference Center**

Thursday, June 16, 2016		
Time	**Lazio Room**	**Vecchio Room**
8:30-10:00	PBD2016 (Privacy for Big Data)	**Special Track:** Big Data Protection and Privacy Protection
10:00-10:10	**Coffee Break (Posters)**	
10:10-11:10	PBD2016(**cont'd**)	Big Data Protection and Privacy Protection (**cont'd**)
12:00-13:30	**Lunch(Location: San Marco Western Dining Room)**	

Keynotes

Keynote 1:

Large Scale Metric Learning using Locality Sensitive Hashing

Tuesday, June 14, 2016

keynote Speaker: **Ramamohanarao Kotagiri FIEAust**

Professor in the Department of Computer Science and Software Engineering, Melbourne. FTSE, FAA.

Abstract: Metric learning tries discover mapping of features such that objects belonging a particular class each other in the new space. However, the current methods of discovering such matric mappings are computationally in feasi ble when the data set is huge with large number of features. My talk will describe the state of the art algorithms for metric learning. I will present our recent work on an efficient approach for discovering metric learning based mappings using Locality Sensitive Hashing (LSH). Our generic approach can accelerate state-of- the-art metric learning while achieving competitive classification accuracy, expanding feasibility by an order of magnitude. Our approach can accelerate Large Margin Nearest Neighbour (LMNN) to learn metrics on 1,000,000 samples in 3.6 minutes which is reduced from 5.8 hours.

Short Bio: Professor Ramamohanarao (Rao) Kotagiri received PhD from Monash University. He was awarded the Alexander von Humboldt Fellowship in 1983. He has been at the University Melbourne since 1980 and was appointed as a professor in computer science in 1989. Rao held several senior positions including Head of Computer Science and Software Engineering, Head of the School of Electrical Engineering and Computer Science at the University of Melbourne and Research Director for the Co-operative Research Centre for Intelligent Decision Systems. He served on the Editorial Boards of the Computer Journal Universal Computer Science, IEETKDE and VLDB (Very Large Data Bases) Journal. He was the program Co-Chair for VLDB, PAKDD, DASFAA and DOOD conferences. He is a steering committee member of IEEE ICDM, PAKDD and DASFAA. He received Distinguished Contribution Award by PAKDD for Data Mining; Distinguished Contribution Award in 2009 by the Computing Research and Education Association of Australasia; Distinguished Contribution Award by DASFAA for Database Research; Distinguished Service Award by IEEE ICDM for Data Mining. Rao is a Fellow of the Institute of Engineers Australia, a Fellow of Australian Academy Technological Sciences and Engineering and a Fellow of Australian Academy of Science.

Keynote 2:

Transparent-Computing based Intelligent Terminals and Their Applications

Tuesday, June 14, 2016

keynote Speaker: **Yaoxue Zhang**

President of the Central South University, China, Fellow of the Chinese Academy of Engineering, Professor in the Department of Computer Science and Technology at Tsinghua University, China.

Abstract: Recently, intelligent terminals, such as wearable devices and self-service terminals, have played an important role in daily life. This is an area with tremendous growth, primarily due to mobile use cases of terminals. However, current systems of intelligent terminals were designed for dedicated applications, not for their coming

dominant use as mobile service. Such systems are prone to high power consumption, safety and cross-platform issues. Transparent computing is a promising technology that solves the urgent problems of intelligent terminals. In this talk, I will review the designs of current system and describes how transparent computing technology significantly improves the progress of intelligent terminals. I will share result of our research and our experience of deploying transparent-computing based intelligent terminals in user (and real) environments. I will also provide a wish list for "sensor+ network" — a large platform based on Transparent-Computing for connecting mass terminals and enhancing their applications.

Short Bio: Prof. Zhang Yaoxue received the B.S. degree from Northwest Institute of Telecommunication Engineering, China, and received the Ph.D. degree in computer networking from Tohoku University, Japan, in 1989. Currently he is a professor in the Department of Computer Science at Central South University, China, and also a professor in the Department of Computer Science and Technology at Tsinghua University, China. His current research interests include computer networking, operating systems, ubiquitous/pervasive computing, transparent computing, and active services. Because of his distinguished contributions, Prof. Zhang has won the National Award for Scientific and Technological Progress (2nd class) twice in 1998 and 2001, National Award for Technological Invention (2nd class) in 2004, National Award for Natural Science (1st class) in 2014, as well as 5 provincial or ministerial awards. He is a winner of the Prize of HLHL (Hong Kong) Foundation for Scientific and Technological Progress in 2005. Prof. Zhang is a fellow of the Chinese Academy of Engineering and the President of the Central South University, China.

Keynote 3:

From Big Data to Big Knowledge: Knowledge Engineering with Big Data

Wednesday, June 15, 2016

keynote Speaker: **Xindong Wu**

Professor of Computer Science at the University of Vermont (USA), Fellow of the IEEE and the AAAS, Yangtze River Scholar in the School of Computer Science and Information Engineering at the Hefei University of Technology (China).

Abstract: Big Data processing concerns large-volume, growing data sets with multiple, heterogeneous, autonomous sources, and explores complex and evolving relationships among data objects. This talk starts with a HACE theorem (http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=6547630)that characterizes the features of the Big Data revolution, and presents BigKE, a big data knowledge engineering framework that handles fragmented knowledge modeling and online learning from multiple information sources, nonlinear fusion on fragmented knowledge, and automated demanddriven knowledge navigation. We discuss challenging issues and our ongoing research efforts with BigKE.

Short Bio: Xindong Wu is a Professor of Computer Science at the University of Vermont (USA), a Yangtze River Scholar in the School of Computer Science and Information Engineering at the Hefei University of Technology (China), and a Fellow of the IEEE and the AAAS. He holds a PhD in Artificial Intelligence from the University of Edinburgh, Britain. His research interests include data mining, Big Data analytics, knowledge engineering, and Web systems. He is Steering Committee Chair of the IEEE International Conference on Data Mining (ICDM), Editor-in-Chief of Knowledge and Information Systems (KAIS, by Springer), and Editor-in-Chief of the Springer Book Series on Advanced Information and Knowledge Processing (AI&KP). He was the Editor-in-Chief of the IEEE Transactions on Knowledge and Data Engineering (TKDE, by the IEEE Computer Society) between January 1, 2005 and December 31, 2008, and has served as Program Committee Chair/Co-Chair for ICDM '03 (the 2003 IEEE International Conference on Data Mining), KDD-07 (the 13th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining), CIKM 2010 (the 19th ACM Conference on Information and Knowledge Management), and ASONAM 2014

(the 2014 IEEE/ACM International Conference on Advances in Social Network Analysis and Mining). Professor Wu is the 2004 ACM SIGKDD Service Award winner and the 2006 IEEE ICDM Outstanding Service Award winner. He received the 2012 IEEE Computer Society Technical Achievement Award "for pioneering contributions to data mining and applications", and the 2014 IEEE ICDM 10-Year Highest-Impact Paper Award.

Keynote 4:

On Application-Aware Information Extraction for Big Data in Social Networks

Wednesday, June 15, 2016

keynote Speaker: **Ming-Syan Chen**

Distinguished Professor and Dean, College of EECS, National Taiwan Univ.

Abstract: Due to the paradigm shift to the Cloud computing, data has been accumulated at fast pace in various applications. Among others, the number of social network activities is increasing drastically. It has become very desirable to conduct various analyses for applications on social networks. However, as the scale of a social network has become prohibitively large, it is infeasible to scrutinize the data and extract the key essence from the entire social network. This issue becomes further complicated due to the heterogeneous nature of the data. As a result, a significant amount of research effort has been elaborated upon extracting the essential application-dependent information from a social network. In this talk, we shall examine some recent studies on data processing and information extraction for social networks. Explicitly, we shall explore the methods for three levels of information extraction in a social network, namely, parameter extraction, information extraction, and structure extraction, and interpret them from their respective objectives. We then comment on how to conduct application-aware information extraction for big data in social networks.

Short Bio: Ming-Syan Chen received the Ph.D. degrees in Computer, Information and Control Engineering from The University of Michigan, Ann Arbor, MI, USA. He is now the Dean of the College of Electrical Engineering and Computer Science and also a Distinguished Professor in EE Department at National Taiwan University. He was a research staff member at IBM Thomas J. Watson Research Center, NY, USA, the President/CEO of Institute for Information Industry (III), and the Director of Research Center of Information Technology Innovation (CITI) in the Academia Sinica. His research interests include databases, data mining, social networks, and IoT applications. He is a recipient of the National Chair Professorship and also the Academic Award of the Ministry of Education, the NSC (National Science Council) Distinguished Research Award, Y.Z. Hsu Science Chair Professor Award, Pan Wen Yuan Distinguished Research Award, Teco Award, Honorary Medal of Information, and K.-T. Li Research Breakthrough Award for his research work, and also the Outstanding Innovation Award from IBM Corporate for his contribution to a major database product. Dr. Chen is a Fellow of ACM and a Fellow of IEEE.

Tutorials

TUTORIAL 1:

Privacy Preserving Data Publishing: From K-Anonymity to Differential Privacy

9:30-12:00, Monday, June 13, 2016

Presenter: Xiaokui Xiao

Abstract: The advancement of information technologies has made it never easier for various organizations (e.g., hospitals, census bureaus) to create large repositories of user data (e.g., patient data, census data). Such data repositories are of tremendous research value, due to which there is much benefit in making them publicly available. Nevertheless, as the data are sensitive in nature, proper measures must be taken to ensure that their publication does not endanger the privacy of the individuals that contributed the data. In this tutorial, I will review the general methodologies for privacy preserving data publishing, with focuses on three classic notions of privacy (i.e., k-anonymity, l-diversity, and differential privacy) and their variants. I will summarize the techniques developed for each privacy notion, and clarify the pros and cons of each notion. I will also discuss open problems and directions for future research.

Short Bio: Xiaokui Xiao is an associate professor at the School of Computer Science and Engineering, Nanyang Technological University (NTU), Singapore. His research focuses on data management and data privacy. He received a PhD degree from the Chinese University of Hong Kong, and worked as a postdoctoral associate at the Cornell University before joining NTU. He was a winner of the Hong Kong Young Scientist Award in 2009, and has two papers invited to the TKDE special issues on "The Best of ICDE 2010" and "The Best of ICDE 2015", respectively.

TUTORIAL 2:

Social Media Mining and Analysis for Business Innovation

14:00-16:30, Monday, June 13, 2016

Presenter: Feida Zhu

Abstract: Our time has been characterised by an explosion of data of all sorts. In particular, the recent blossom of social network services has provided everyone with an unprecedented level of ease and fun of sharing information of all kinds. These public social data therefore reveal a surprisingly large amount of information about an individual which is otherwise unavailable. The business, consumer and social insights attainable from this big and dynamic social data are critically important and immensely valuable in a wide range of applications for both private and public sectors. What can we tell from the social data on the context of consumer behaviour, such that we can enrich the transaction-based data of traditional corporate databases? How can we unleash the power of social connections to identify potential high-value customers and perform cost-effective risk management? How to achieve dynamic social listening on 200 million users and detect in realtime marketing opportunities based on bursty events? In this tutorial, we will introduce a cluster of research results that underlie some initial answers to these questions, along with recent advances in real-life enterprise-level applications.

Short Bio: Feida Zhu is an assistant professor in School of Information Systems, Singapore Management University (SMU). His research interests include large-scale data mining, text mining, graph/network mining and social network analysis. Feida is the Founding Director of the Pinnacle Lab for Analytics with China Ping An Insurance Group and the DBS-SMU Life Analytics Lab. He has published more than 80 papers in referred international conferences and journals, including ICDE, VLDB, SIGMOD, ICDM, WWW, JMLR, TODS, TKDE, etc. His work has won The Best Paper Award at 2016 International Conference on Database Systems for Advanced Applications (DASFAA'16) and The Best Student Paper Awards at 2007 IEEE International Conference on Data

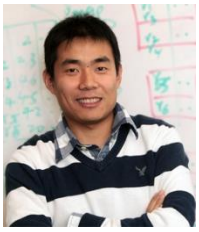
Engineering (ICDE'07) and 2007 Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD'07). Feida obtained his Ph.D. in Computer Science from the University of Illinois at Urbana-Champaign (UIUC) in 2009, supervised by Prof. Jiawei Han.

TUTORIAL 3:

Towards Interactive Big Spatial Data Analytics

19:00-21:30, Monday, June 13, 2016

Presenter: Li Feifei



Abstract: Large spatial data becomes ubiquitous. As a result, it is critical to provide fast, scalable, and high-throughput spatial queries and analytics for numerous applications in location-based services (LBS). Traditional spatial databases and spatial analytics systems are disk-based and optimized for IO efficiency. But increasingly, data are stored and processed in memory to achieve low latency, and CPU time becomes the new bottleneck. We will present the Simba (Spatial In-Memory Big data Analytics) system that offers scalable and efficient in-memory spatial query processing and analytics for big spatial data. Simba is based on Spark and runs over a cluster of commodity machines. In particular, Simba extends the Spark SQL engine to support rich spatial queries and analytics through both SQL and the DataFrame API. It introduces the concept and construction of indexes over RDDs in order to work with big spatial data and complex spatial operations. Lastly, Simba implements an effective query optimizer, which leverages its indexes and novel spatial-aware optimizations, to achieve both low latency and high throughput. Extensive experiments over large data sets demonstrate Simba's superior performance compared against other spatial analytics system. Through its SQL and DataFrame API, Simba provides interactive analytics over big spatial data, but when data grows too big and/or computation becomes too expensive, we will talk about achieving interactive (or becoming more interactive in these scenarios) spatial analytics through online sampling, online aggregation, and online analytics.

We will survey related work for systems that process big spatial data and techniques for interactive and online queries and analytics.

Short Bio: Feifei Li is currently an associate professor at the School of Computing, University of Utah. His research focuses on improving the scalability, the efficiency, and the effectiveness of database and big data management systems. He also works on various data security problems in these systems. He was a recipient for an NSF career award in 2011, two HP IRP awards in 2011 and 2012 respectively, a Google App Engine award in 2013, the IEEE ICDE best paper award in 2004, the IEEE ICDE 10+ Years Most Influential Paper Award in 2014, a Google Faculty award in 2015, and the SIGMOD Best Demonstration Award in SIGMOD 2015. He is/was the demo PC chair for VLDB 2014, the general co-chair for SIGMOD 2014, a PC area chair for both ICDE 2014 and SIGMOD 2015, and an associate editor for IEEE TKDE.

Research Sessions

Tuesday, June 14, 2016

Time	S1: Network Security **Lazio Room** ***13:30-15:00 Co-chairs:*** *Guo Li and Aiping Li,* ***15:10-16:25 Co-chairs:*** *Yi Han and Weihong Han*	S2: Learning and Mining **Vecchio Room** ***13:30-15:00 Co-chairs:*** *Zhiyong Peng and Shuqiang Yang* ***15:10-16:25 Co-chairs:*** *Xiaokui Xiao and Rong Jian*	S3: Social Network Analysis 1 **Sicilia Room** ***13:30-15:00 Co-chairs:*** *Jiuming Huang* ***15:10-16:50 Co-chairs:*** *Heyang Huang and Bing Wu*
13:30 - 13:45	Session Overview	Session Overview	Session Overview
13:45 14:10	A Dual Threshold Secret Sharing Scheme Among Weighted Participants of Special Right *Guozhen Shi, Yunfei Ci, Rongna Xie, Haojie Wang, and Jiqiang Zeng*	BPPGD: Budgeted Parallel Primal grAdient desCent Kernel SVM on Spark *Jinchen Sai, Bai Wang, and Bin Wu*	LinkSHRINK： Overlapping Community Detection with Link-Graph *Dingyi Yin, Bin-Wu, and Yunlei Zhang*
14:10 14:35	Structural Vulnerability Analysis in Complex Networks Based on Core Theory *Kan Zhang, Fei Jiang, Yang Zuo, and Yunyun Niu*	Frequent Pattern Mining based on Approximate Edit Distance Matrix *Dan Guo, Ermao Yuan, and Xuegang Hu*	Social Recommendation with Tag Side Information *Xiang Hu, Wendong Wang, Xiangyang Gong, Bai Wang, Xirong Que, and Hongke Xia*
14:35 15:00	Exploring New Cryptographical Construction Of Complex Network Data *Hongyu Wang, Jin Xu, and Bing Yao*	Link Prediction-based Multi-label Classification on Networked Data *Yinfeng Zhao, Lei Li, and Xindong Wu*	Uncovering and Characterizing Internet Water Army in Online Forums *Guirong Chen, Wandong Cai, Jiuming Huang, and Xianlong Jiao*
15:00 - 15:10	Coffee Break		
15:10 15:35	The Similarity Analysis of Malicious Software *Jing Liu, Yuan Wang, and Yongjun Wang*	Mining Individual Mobility Patterns Based on Location History *Xiaopeng Chen, Dianxi Shi, Banghui Zhao, and Fan Liu*	Finding Experts in Community Question Answering Based on Topic-Sensitive Link Analysis *Juan Yang, Shuang Peng, Lin Wang, and Bin Wu*
15:35 16:00	Fingerprinting Web Browser for Tracing Anonymous Web Attackers *Xiaofeng Liu, Qixu Liu, Xiaoxi Wang, and Zhaopeng Jia*	A New Scheme Based on HSSL for Solving the Stochastic Point Location Problem *Jinchao Huang, Yan Yan, Ying Guo, and Shenghong Li*	Parallelization of Latent Group Model for Group Recommendation Algorithm *Xuelin Zeng, Bin Wu, Jing Shi, Chang Liu, and Qian Guo*

16:00 16:25	Role and Time-based Access Control with Efficient Revocation for Cloud Storage *Fenghua Li, Yanchao Wang, Jinbo Xiong, and Rongna Xie*	A General Strategy for Solving the Stochastic Point Location Problem by Utilizing the Correlation of Three Adjacent Nodes *Ying Guo, Hao Ge, Jinchao Huang, and Shenghong Li*	The Prediction of User Topic Interest Based on Tags and Interaction of Users *Lu Deng, Jiuming Huang, Yi Han, Bin Zhou, and Qiang Liu*
16:25 16:50			FTM: Recommending the Right Items for User Temporal Interests with Matrix Factorization through Topic Model *Yanmin Shang, Kefu Xu, Yi Han, and Chuang Zhang*

Wednesday, June 15, 2016

Co-chairs:

Time	S4: Social Network Analysis 2 **Lazio Room** ***13:30-15:00 Co-chairs:*** *Chuan Shi and JieTang* ***15:10-16:50 Co-chairs:*** *Li Pan and Liang Gan*	S5: QA and Natural Language Processing **Vecchio Room** ***13:30-15:00 Co-chairs:*** *Hongli Zhang,and Weizhe Zhang* ***15:10-16:25 Co-chairs:*** *Xi Zhang and Qing Li*	S6: Storage, Network, graph and visualization **Sicilia Room** ***13:30-15:00 Co-chairs:*** *Yuxiao Li and Shuqiang Jiang* ***15:10-16:50 Co-chairs:*** *Jinjun Chen and Changjun Hu*
13:30 - 13:45	Session Overview	Session Overview	Session Overview
13:45 14:10	Chinese Article Classification Oriented to Social Network Based on Convolutional Neural Networks *Xiang Zhu, Jiuming Huang, Zhongcheng Zhou, and Yi Han*	Predicate-Oriented Query of RDF Data Based on A Distributed Storage Model *Xuling Luo and Bin Wu*	CareDedup: Cache-aware Deduplication for Reading Performance Optimization in Primary Storage *Bin Lin, Shanshan Li, Xiangke Liao, Xiaodong Liu, Jing Zhang, and Zhouyang Jia*
14:10 14:35	Clustering Product Features of Online Reviews Based on Nonnegative Matrix Tri-factorizations *Wang Jiajia, Liu Yezheng, Jiang Yuanchun, Sun Chunhua, Sun Jianshan, and Du Yanan*	LSTM-based Deep Learning Models for Answer Ranking *Zhenzhen Li, Jiuming Huang, Zhongcheng Zhou, Haoyu Zhang, Shoufeng Chang, and Zhijie Huang*	A Measurement Study on Mainline DHT and Magnet Link *Zhang Xinxing, Tian Zhihong, and Zhang Luchen*
14:35 15:00	Using Structural Features to Characterize Social Ties *Yang Zuo and Kan Zhang*	A Hybrid Document Feature Extraction Method Using Latent Dirichlet Allocation and Word2Vec *Zhibo Wang, Long Ma, and Yanqing Zhang*	Max-Flow Rate Priority Algorithm for Evacuation Route Planning *Dan Guo, Chen Gao, Wu Ni, and Xuegang Hu*
15:00 - 15:10	Coffee Break		

15:10 15:35	A Framework of Privacy Decision Recommendation for Image Sharing in Online Social Networks *Donghui Hu, Fan Chen, Xintao Wu, and Zhongqiu Zhao*	A Topic Model for Hierarchical Documents *Yang Yang, Feifei Wang, Fei Jiang, Shuyuan Jin, and Jin Xu*	On Adjacent Vertex-Distinguishing Total Chromatic Number of Generalized Petersen Graphs *Enqiang Zhu, Fei Jiang, Zepeng Li, Zehui Shao, and Jin Xu*
15:35 16:00	Influence Maximization in Social Networks Based on Non-back-tracking Random Walk *Jingzhi Pan, Fei Jiang, and Jin Xu*	Cognitive Detection of Multiple Discrete Emotions from Chinese Online Reviews *Si Jiang and Jiayin Qi*	Constructions of Uniquely 3-colorable Graphs *Zepeng Li and Jin Xu*
16:00 16:25	On Improving a Microblog Ranking *Jidong Li, Xin Li, Mingming Shi, Meng Zhou, and Linjing Lai*		An Experimental Study on Block DCT Coefficient Analysis for Image Splicing Detection *Xiang Lin, Shi-Lin Wang, Wei-Jun Huang, and Jun-Yao Lai*
16:25 16:50	Integrating Relationships and Attributes: A Model of Multilayer networks *Wen Zhou, Weidong Bao, Xiaomin Zhu, Ji Wang, and Chao Chen*		Equalized Interval Centroid Based Watermarking Scheme for Stepping Stone Traceback *Xiaoqiang Xu, Jing Zhang, and Qianmu Li*

Workshops

W1: IDSN2016 (The First International Workshop on Information Diffusion in Social Networks)
W2: DASSC2016 (Data Analysis and Security in Smart City)
W3: HENA2016 (The 2nd workshop of Heterogeneous Information Network Analysis and Applications)
W4: BS2016 (The 1st International Workshop on Big Search)
W5: DV2016 (Workshop on Data Visualization)
W6: BDBA2016 (Big Data and Business Analytics)
W7: PBD2016 (Privacy for Big Data)
W8: SRS2016 (The First International Workshop on Social Recommendation Systems)
W9: OSWD2016 (Open Source Web Data)
W10: SMP 2016 (Workshop on Social Media Processing)

Workshop schedule 1

Monday, *June 13, 2016.* BDBA 2016, OSWD2016, DV2016, HENA2016, SMP2016.

Time	**BDBA 2016** **Vecchio Room** **Chair:** Jianshan Sun	**OSWD2016** **Sicilia Room** **Chair:** Zhaoyun Ding	**DV2016** **Lazio Room** **Chair:** Ronghuan Yu	**HENA2016** **Pisa Room** **Chair:** Bin Wu	**SMP2016** **Veneto Room** **Chair:** Jie Tang
8:30 8:45	Workshop Overview	Workshop Overview	Workshop Overview	Workshop Overview	8:30-9:00 Node Embeddings for Graph Similarity *Michalis Vazirgiannis* 9:00-9:30 D-cores for citation data evaluation and relevant explorations
8:45 9:30	Keynote: From Information Systems to Business Analytics: A Big Data Driven Methodology *Wei Xu*	Keynote: Big Data in Response to Climate Disaster *Lu Xin*	Keynote: Toward a Visualizing Cyberspace: Data-driven Visual Content Understanding and Production *Xiaowu Chen*	Keynote: Mining Knowledge from Networked Data: A Heterogeneous Network Analysis Approach *Chuan Shi*	

					Christos Giatsidis
9:30 9:45	An Empirical Study on the Performance of Enterprises and Investment in the Human Capital Huaming *Wu and Jin Hang*	Survey on Software Vulnerability Analysis Method Based on Machine Learning *Gong Jie, Kuang Xiao-Hui, and Liu Qiang*	Web Service Run-Time Monitoring and Visualization Analysis Based on Probe *Liang Chen, Dapeng Xiong, Hua Wang, and Peng Zou*	Attribute Credibility Based Sybil Goup Detection in Online Social Networks *Yechao Xia, Li Pan, Liang Shi, and Futai Zou*	Graph kernels for document similarity *Polykarpos Meladianos*
9:45 10:00	Combination Forecast on Health Status of Residents in China *Chunlei Han, Shuangshuang Wang, Kun Han, and Xihou Hu*	Correlation Analysis Using Global Dataset of Events, Location and Tone *Kedi Chen, Fengcai Qiao, and Hui Wang*	Research on Visualization Techniques in Large Scale Virtual Battlefield *Wu Lingda, Hao Hongxing, Yang Chao, Yu Ronghuan, and Hu Huaquan*	A Simple Method for Locating Topic Sources in Uncertainty Diffusion Networks *Huang Jianyi, Hu Chungjin, Fang Mingzhe, Wu Tong, and Shi Peng*	
10:00 10:15	A Personalized Microblog Search Model Considering User-Author Relationship *Yuanchun Jiang, Yuxiang Xu, and Liang Shao*	Sentiment Classification of Chinese Microblogging Texts with Global RNN *Jiajun Cheng, Pei Li, Zhaoyun Ding, Sheng Zhang, and Hui Wang*	Topology Analysis of Vector Fields and Application Prospec *Li Chao, Wu Lingda, Yang Jia, and Zhao Bin*	RDDShare: Reusing Results of Spark RDD *Huang Chao-Qiang, Yang Shu-Qiang, Tang Jian-Chao, and Yan Zhou*	Dense subgraph discovery and applications *Ioannis Nikoletzos*
10:15 10:30	An Empirical Business Study on Service Providers' Satisfaction in Sharing Economy . *Mengyu Zhang, Xusen Cheng, Xuan Luo, and Shixuan Fu*	Finding Influential Papers in Citation Networks *Sheng Zhang, Danling Zhao, Ran Cheng, Jiajun Cheng, and Hui Wang*	The Cloud Design of the Cognitive Virus Based on SaaS *Sun Yang and Xiong Wei*	A New Weighted Similarity Method Based on Neighborhood User Contributions for Collaborative Filtering *Xuefeng Zang, Tianqi Liu, Shuyu Qiao, Wenzhu Gao, Jiatong Wang, Xiaoxin Sun, and Bangzuo Zhang*	
10:30 10:40	Coffee Break				

10:40 10:55	Complementarity: A Novel Collaborator Recommendation Method for SMEs *Wei Xu, Ying Lu, Jing Zhao, and Minghui Qian*	Probability-Weighted Extreme Learning Machine for Classification with Uncertain Data *Hang Gao, Yuxing Peng, and Songlei Jian*	Research on Network Simplification by Edge Bundling *Yao Zhonghua and Wu Lingda*	Automatic Threshold Calculation Based Label Propagation Algorithm for Overlapping Community *Gongshen Liu, Kui Meng, Hongyi Guo, Li Pan, and Jianhua Li*	Modelling information diffusion in social networks *Yang Yang*
10:55 11:10	Detection and Defense of SYN Flood Attacks Based on Dual Stack Network Firewall *Ding Pengfule, Tian Zhihong, Zhang Hongli, Wang Yong, Zhang Liang, and Guo Sanchuan*	Link Prediction Based on Clustering Information in Scientific Coauthorship Networks *Yang Ma, Guangquan Cheng, Zhong Liu, and Xingxing Liang*	Low-Cost INS Velocity Kalman Filtering Based on Rational Fitting *Pei Dong and Qin Daguo*	Remanufacturing Closed-Loop Supply Chain Model with RFID Technology Saving Recycling Cost *Yang Ai-Feng, Wan Si, and Hu Xiao-Jian*	
11:10 11:25	GEV Regression with Convex Loss Applied to Imbalanced Binary Classification *Haolin Zhang, Gongshen Liu, LiPan, Kui Meng, and Jianhua Li*	Open Relation Extraction from Chinese Microblog Text *Jing Xu, Liang Gan, Zhou Yan, Quanyuan Wu, and Yan Jia*	An Expandable Community Division Method for Network Visualization *Xiangang Wang and Hanchen Song*	A News Event Detection Algorithm Based on Key Elements Recognition *Xiaoting Qu, Juan Yang, Bin Wu, and Haiming Xin*	Modelling and measuring social influence *Jing Zhang*
11:25 11:40	Behavior Analysis Based SMS Spammer Detection in Mobile Communication Networks *Zhang Bin, Zhao Gang, Feng Yunbo, Zhang Xiaolu, Jiang Weiqiang, Dai Jing, and Gao Jiafeng*	A Topic Label Extraction Method for the University BBS *Wenling Tang, Xu Wu, Yuxiao Li, and Jin Xu*	A Study on Route Planning of Helicopter in Low Altitude Area *Liyun Hao, Chao Guo, and Lingda Wu*	Online Topic Evolution Modeling Based on Hierarchical Dirichlet Process *Tao Ma, Dacheng Qu, Rui Ma, Wei Feng, and Kan Li*	
11:40 11:55	Unknown Word Detection in Song Poetry *Xia Li, Bin Wu, and Bailing Zhang*	A Fast and High Quality Approach for Overlapping Community Detection through Minimizing Conductance	A Hybrid Modeling Method for Dynamic Liquid Simulation *Ling Zou and Guoping Wang*		

		Yang Gao, Hongli Zhang, and Yue Zhang			
11:55 12:10	A Real Time EEG Analysis System *Jonathan Garza, Yuezhe Li, Yuchou Chang, and Hong Li*	Detecting Malicious Server Based on Server-to-Server Realation Graph *Zihao Wang, Futai Zou, Bei Pei, Weijia He, Li Pan, Zhaochong Mao, and Linsen Li*	The Visualization Analysis and Vulnerability Repair Research for the Module Dependency Managerial of VxWorks 5.5 Operating System *Peng Wang, Liang Chen, Peng Zou, Li Li, and Junlei Bao*		

Workshop schedule 2

Monday, *June 13, 2016.* DASSC2016, BS2016, IDSN2016, SMP2016, SRS2016.

Time	**DASSC2016** **Vecchio Room** **Chair:** Li Pan	**BS2016** **Sicilia Room** **Chair:** Chao Lee	**IDSN2016** **Lazio Room** **Chair:** Changjun Hu	**SMP2016** **Veneto Room** **Chair:** Jie Tang
13:30 13:45	Workshop Overview	Workshop Overview	Workshop Overview	**13:30-15:30** Panel and round table meeting
13:45 14:00	Keynote: Dynamic Lip Print – A New Kind of Biometric Feature *Shi-Lin Wang*	The Multiple Attribute Association Decision-Making Method to Make Online Advertisements Using Influential Users in Social Networ *Jianmin He, Long Yu, and Yezheng Liu*	Keynote: The Mechanisms of Information Diffusion in Micro and Macro-Scale Levels *Peng Shi*	**cont'd**
14:00 14:15	Keynote(**cont'd)**	Utilize Item Correlation to Improve Aggregate Diversity for Recommender Systems *Liu Yezheng, Wang Jinkun, Jiang Yuanchun, Sun Jianshan, and Sun Chunhua*	Keynote(**cont'd)**	**cont'd**
14:15 14:30	Keynote(**cont'd)**	Community Detection Based on Variable Vertex Influence	Keynote(**cont'd)**	**cont'd**

		Yuntao Yao, Wei Wu, Mingtao Lei, and Xi Zhang		
14:30 14:45	Convolutional Neural Network Based on Principal Component Analysis Initialization for Image Classification *Xu-Die Ren, Hao-Nan Guo, Guan-Chen He, Xu Xu, Chong Di, and Sheng-Hong Li*	Efficient Privacy-Preserving Processing Scheme for Location-Based Queries in Mobile Cloud *Qingqing Xie and Liangmin Wang*	Design and Implementation of Scheduling Pool Scheduling Algorithm Based on Reuse of Jobs in Spark *Tang Jianchao, Yang Shuqiang, Huang Chaoqiang, and Yan Zhou*	**cont'd**
14:45 15:00	Energy-Efficient Hadoop Green Schedule *Jianhong Zhai, Hongli Zhang, Xiaorou Zhong, Wei Li, Lai Wang, and Zeyu He*	Distributed Storage Optimization for Small Data with High Density in Internet of Vehicles *Hongbo Zhang, Huibing Zhang, and Xiaoli Hu*	Discovering Latent Influence in Online Social Retweet Behaviors *Bo Sun, Chungjin Hu, Wenwen Xu, and Huixing Fan*	**cont'd**
15:00 15:10	Coffee Break			**cont'd**
15:10 15:25	TREST: A Hadoop Based Distributed Mobile Trajectory Retrieval System *Jianming Lv, Xingtong Wang, Fengtao Huang, Junjie Yang, Tianfeng Wu, and Qifa Yan*	Research on Video Anti-hotlinking for OTT *Dongyan Zhang, Zhiwen Yang, and Weihua Li*	OPSDS: A Semantic Data Integration and Service System Based on Domain Ontology *Xin Liu, Chungjin Hu, Jianyi Huang, and Feng Liu*	**cont'd**
15:25 15:40	A Novel Android Malware Detection Method Based on Markov Blanket *Xiaotian Zhang, Donghui Hu, Yuqi Fan, and Kui Yu*	A Fine-Grained Multiparty Access Control Model for Photo Sharing inOSNs Chao Lee, Wei Wang, and Yunchuan Guo	A Bidirectional LSTM Model for Question Title and Body Analysis in Question Answering *Yuanping Nie, Chao An, Jiuming Huang, Zhou Yan, and Yi Han*	**cont'd** **15:40-17:25** **SRS2016** **Veneto Room** **Chair:** Chuan Zhou
15:40	Shrinking the Sentiment Analysis for Signed		Information Diffusion Mechanisms in Online	Workshop Overview

15:55	Network Construction *Shen Su, Hongli Zhang, Yue Zhang, Dongyang Zhan, and Junxi Guo*		Social Networks *Shushen Fu, Chungjin Hu, Ying Hu, Bo Sun, Wenrui Ying, and Peng Shi*	
15:55 16:10			Question Similarity Modeling with Bidirectional Long Short-Term Memory Neural Network Chao An, Jiuming Huang, Shoufeng Chang, and Zhijie Huang	Time-Aware First Story Detection in Twitter Stream *Yongqin Qiu, Sixu Li, Wenjing Yang, Rui Li, Lihong Wang, and Bin Wang*
16:10 16:25			A Police Big Data Analytics Platform: Framework and Implications *Hai Yu and Chungjin Hu*	Ranking-Based Music Recommendation in Online Music Radios *Yao Lu, Zhi Qiao, Peng Zhang, and Li Guo*
16:25 16:40				A Fast Algorithm for Competitive Recommendation Marketing Strategy *Wenyu Zang, Xiao Wang, and Yue Hu*
16:40 16:55				Image Super-Resolution with Deep Convolutional Neural Network . *Xiancai Ji, Yao Lu, and Li Guo*
16:55 17:10				A Survey of Game Theoretic Methods for Cyber Security *Yuan Wang, Yongjun Wang, Jing Liu, Zhijian Huang, and Peidai Xie*
17:10 17:25				Pursuit Estimator Learning Automata Based Approach for Online Event Pattern Tracking *Wen Jiang, Hao Ge, Tianrong Wu, Fanming Wang, and Shenghong Li*

Workshop schedule 3

Thursday, June 16, 2016. PBD2016.

Time	PBD2016 **Lazio Room** **Chair:** Fenghua Li
8:30 - 8:45	Workshop Overview
8:45 9:00	LRDM: Local Record-Driving Mechanism for Big Data Privacy Preservation in Social Networks *Weihao Li and Hui Li*
9:00 9:15	A Voronoi-Based Dummy Generation Algorithm for Privacy-Aware Location-Based Services *Cui Zhang and Fenghua Li*
9:15 9:30	Secure Communication Protocol with Privacy-Preserving Monitoring and Controllable Linkability for V2G *Rong Jiang, Rongxing Lu, Chengzhe Lai, and Aiping L*
9:30 9:45	Real-Time Traffic Status Classification Based on Gaussian Mixture Model *Xiong Liu, Li Pan, and Xiaoliang Sun*
9:45 10:00	New Properties and Bounds of Anti-average Numbers *Yangyang Zhou, Jin Xu, and Bing Yao*
10:00-10:10	Coffee Break
10:10 10:25	A Novel APPs Recommendation Algorithm Based on APPs Popularity and User Behaviors *Liu Yezheng, Du Fei, Jiang Yuanchun, Liu Xiao, and Wang Qiudan*
10:25 10:40	Mobile Authentication System Based on National Regulation and NFC Technology *Chengjun Cai, Jian Weng, and Jianan Liu*
10:40 10:55	Differentially Private Publication Scheme for Trajectory Data *Meng Li, Liehuang Zhu, Zijian Zhang, and Rixin X*
10:55 11:10	Survey on Domain Name System Security *Futai Zou, Siyu Zhang, Bei Pei, Li Pan, Linsen Li, and Jianhua Li*

Industrial Track

Title: Trend of next-generation threat and challenges to security

15:45-16:45, Monday, June 13, 2016

Speaker: Yongcun Gan, Huawei Technologies Co., Ltd

Short Bio:

Gan is an expert in security, who has been starting designing and developing firewall since 2001, and has been involved in design and development of security product, such as UTM, SWG, NGFW, APT defense system. Gan excels in principles of the operating system Linux, Linux kernel programming and principles of Windows operating system. He joined Huawei in 2011 and occupied in analysis and defense technology of APT and are leading the research team to make a breakthrough in the field of fire hunters. Now Gan is focus on defense technology system of next-generation security and construction of security ecosystem.

Abstract:

1. Trend of next-generation threats
2. Challenges to security
3. Works of Huawei has been done for those security challenges
4. Open Questions, like from what directions Huawei prefers to make cooperation with the academic circle?

Posters

- **June 15 Morning 10:00-10:10 (Location: Goethe Room)**

- **June 16 Morning 10:00-10:10 (Location: Goethe Room)**

Panel: “Big Data meets Deep Learning: Opportunities or Threat?”

Wednesday, June 15, 2016

Panelists:

Wu Xindong (Univ. of Vermont),
Zhang Jun (South China Univ. of Technology),
Gong Zhiguo (Univ. of Macau),
Zhang Yanchun (Univ. of Victoria)

Convenor:

Qing Li (City University of Hong Kong)

Conference Venue

FLOOR PLAN-Country Garden Phoenix Hotel Changsha：