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Program

Advanced Data Mining and Applications (ADMA)
12th International Conference
Collocated with
Social Computing Summit (SCS)

2016 ADMA & SCS
Gold Coast, Australia

ADMA 12-14 December, 2016
SCS 14-15 December, 2016

Draft – 12 OCT 2016



2016 ADMA

The theme of the Conference Advanced Data Mining and Applications (ADMA 2016), aims at bringing together the experts on data mining from around the world, and providing a leading international forum for the dissemination of original research findings in data mining, spanning applications, algorithms, software and systems, as well as different applied disciplines with potential in data mining, such as smartphone and social network mining, bio-medical science and green computing. ADMA 2016 will promote the same close interaction and collaboration among practitioners and researchers.

2016 SCS

Social media is now a part of human life. An impending question that extends from this fact is whether we can understand this cyberspace for public well-being such as health and security. SCS is the premier venue for presenting research in the design and use of technologies that affect behaviours of organizations, communities, and individuals. Bringing together top researchers, industry experts, government agencies and practitioners from academia and industry who are interested in the area of social computing, we explore questions critical to the future of our communities.



CONFERENCE DAY 1

Monday 12 DEC 2016 – ADMA

Mantra Legends Hotel, 25 Laycock St, Surfers Paradise
Gold Coast

TIME	Function	Location
7:30am	Registration	Reception
8:30am	Conference Opening	Apollo Room 2&3
9:00am	Keynote Speech	Apollo Room 2&3
10:00am	Classification under Inference Rules: Algorithms, Lower Bounds, and Open Questions Professor Yufei Tao The University of Queensland, Australia	
10:00am	Morning Tea	
10:30am		

10:30am – 12:10 Parallel Paper Presentations

Session 1-1: Data Mining Algorithms 10:30am – 12:10, Apollo Room 2 Session Chair:

Effective Monotone Knowledge Integration in Kernel Support Vector Machines (Spotlight)
Christopher Bartley, Wei Liu and Mark Reynolds

Confidence-Weighted Bipartite Ranking (Spotlight)
Majdi Khalid, Indrakshi Ray and Hamidreza Chitsaz

An Ensemble Approach for Better Truth Discovery
Xiu Susie Fang, Quan Z. Sheng and Xianzhi Wang

Single Classifier Selection for Ensemble Learning
Guangtao Wang, Xiaomei Yang and Xiaoyan Zhu

Session 1-2: Applications in Community Detection 10:30am – 12:10, Apollo Room 3 Session Chair:

Textual Cues for Online Depression in Community and Personal Settings (Spotlight)

Thin Nguyen, Svetha Venkatesh and Dinh Phung

Community Detection in Networks with Less Significant Community Structure (Spotlight)

Ba-Dung Le, Hung Nguyen and Hong Shen

Relative Neighborhood Graphs Uncover the Dynamics of Social Media Engagement

Natalie Jane de Vries, Ahmed Shamsul Arefin, Luke Mathieson, Benjamin Lucas and Pablo Moscato

Community Detection in Dynamic Attributed Graphs

Gonzalo A. Bello, Steve Harenberg, Abhishek Agrawal and Nagiza F. Samatova

12:10 Lunch

1:20pm

1:30pm – 3:00pm

Parallel Paper Presentations

Session 2-1: Data Mining and Decision Making

1:30pm – 3:00pm, Apollo Room 2

Session Chair:

Dynamic Reverse Furthest Neighbor Querying Algorithm of Moving Objects (Spotlight)

Bohan Li, Chao Zhang, Weitong Chen, Yingbao Yang, Shaohong Feng, Qiqian Zhang, Weiwei Yuan, and Dongjing Li

Effective Traffic Flow Forecasting Using Taxi and Weather Data

Xiujian Xu, Benzhe Su, Xiaowei Zhao, Zhenzhen Xu, and Quan Z. Sheng

Mining Source Code Topics through Topic Model and Words Embedding

Wei Emma Zhang, Quan Z. Sheng, Ermyas Abebe, M. Ali Babar, and Andi Zhou

Discovering Trip Hot Routes Using Large Scale Taxi Trajectory Data

Linjiang Zheng, Qisen Feng, Weining Liu and Xin Zhao

Session 2-2: Classification and Clustering

1:30pm – 3:00pm, Apollo Room 3

Session Chair:

Prediction-Based, Prioritized Market-Share Insight Extraction (Spotlight)

Renato Keshet, Alina Maor and George Kour

Discovering Spatially Contiguous Clusters in Multivariate Geostatistical Data Through Spectral Clustering

Francky Fouedjio

On Improving Random Forest for Hard-to-Classify Records

Md Nasim Adnan and Md Zahidul Islam

IPC Multi-label Classification Based on the Field Functionality of Patent Documents

Sora Lim and Yongjin Kwon

3:00pm Afternoon Tea

Demo Session

3:30pm

Apollo Room 1

3:30pm – 5:10pm

Parallel Paper Presentations

Session 3-1: Heterogeneity and Data Mining

3:30pm – 5:10pm, Apollo Room 2

Session Chair:

Interrelationships of Service Orchestrations (Spotlight)

Victor W. Chu, Raymond K. Wong, Fang Chen and Chi-Hung Chi

Outlier Detection on Mixed-Type Data: An Energy-Based Approach (Spotlight)

Kien Do, Truyen Tran, Dinh Phung and Svetha Venkatesh

Scholarly Output Graph: A Graphical Article-Level Metric Indicating the Impact of a Scholar's Publications

Yu Liu, Dan Lin, Jing Li and Shimin Shan

Event Evolution Model Based on Random Walk Model with Hot Topic Extraction

Chunzi Wu, Bin Wu and Bai Wang

Session 3-2: Data Mining and Knowledge Discovery

3:30pm – 5:10pm, Apollo Room 3

Session Chair:

Biologically Inspired Pattern Recognition for E-nose Sensors (Spotlight)

Sanad Al-Maskari, Wenping Guo and Xiaoming Zhao

Low-Rank Feature Reduction and Sample Selection for Multi-output Regression (Spotlight)

Shichao Zhang, Lifeng Yang, Yonggang Li, Yan Luo and Xiaofeng Zhu

Distributed Lazy Association Classification Algorithm Based on Spark

Xueming Li, Chaoyang Zhang, Guangwei Chen, Xiaoteng Sun, Qi Zhang, and Haomin Yang

Knowledge-Guided Maximal Clique Enumeration

Steve Harenberg, Ramona G. Seay, Gonzalo A. Bello, Rada Y. Chirkova, P. Murali Doraiswamy, and Nagiza F. Samatova



Demo Papers:

IRS-HD: An Intelligent Personalized Recommender System for Heart Disease Patients in a Tele-Health Environment

Raid Lafta, Ji Zhang, Xiaohui Tao, Yan Li, and Vincent S. Tseng

Sentiment Analysis for Depression Detection on Social Networks

Xiaohui Tao, Xujuan Zhou, Ji Zhang, and Jianming Yong

Traffic Flow Visualization Using Taxi GPS Data

Xiujuan Xu, Zhenzhen Xu, and Xiaowei Zhao

7:30pm, Conference Reception, Mantra Legends Hotel, Surfers Paradise



CONFERENCE DAY 2

Tuesday 13 DEC 2016 – ADMA

Mantra Legends Hotel, 25 Laycock St, Surfers Paradise
Gold Coast

TIME	Function	Location
8:00am	Registration (ADMA)	Reception
9:00am	Keynote Speech	Apollo Room 2&3
10:00am	<i>Take a Step to the Side Data Scientist... Make Room for the Data Artist!</i> Prof. Pablo Moscato, ARC Future Fellow University of Newcastle, Australia	

10:00am Morning Tea
10:30am

10:30am – 12:10 Parallel Paper Presentations

Session 4-1: Data Mining and Classification
10:30am – 12:10, Apollo Room 2
Session Chair:

Addressing Class Imbalance and Cost Sensitivity in Software Defect Prediction by Combining Domain Costs and Balancing Costs (Spotlight)
Michael J. Siers and Md Zahid Islam

Adopting Hybrid Descriptors to Recognise Leaf Images for Automatic Plant Specie Identification (Spotlight)
Ali A. Al-Kharaz, Xiaohui Tao, Ji Zhang, and Raid Lafta

Query Classification by Leveraging Explicit Concept Information
Fang Wang, Ze Yang, Zhoujun Li and Jianshe Zhou

Stabilizing Linear Prediction Models Using Autoencoder
Shivapratap Gopakumar, Truyen Tran, Dinh Phung and Svetha Venkatesh

Session 4-2: Unsupervised Learning and Clustering

10:30am – 12:10, Apollo Room 3

Session Chair:

Unsupervised Hypergraph Feature Selection with Low-Rank and Self-Representation Constraints (Spotlight)

Wei He, Xiaofeng Zhu, Yonggang Li, Rongyao Hu, Yonghua Zhu and Shichao Zhang

Efficient Mining of Pan-Correlation Patterns from Time Course Data (Spotlight)

Qian Liu, Jinyan Li, Limsoon Wong, and Kotagiri Ramamohanarao

Causality-Guided Feature Selection

Mandar S. Chaudhary, Doel L. Gonzalez II, Gonzalo A. Bello, Michael P. Angus, Dhara Desai, Steve Harenberg, P. Murali Doraiswamy, Fredrick H. M. Semazzi, Vipin Kumar and Nagiza F. Samatova

Extracting Key Challenges in Achieving Sobriety Through Shared Subspace Learning

Haripriya Harikumar, Thin Nguyen, Santu Rana, Sunil Gupta, Ramachandra Kaimal and Svetha Venkatesh

12:10 Lunch

1:20pm

1:30pm – 3:00pm

Parallel Paper Presentations

Session 5-1: High Performance Computing

1:30pm – 3:00pm, Apollo Room 2

Session Chair:

Improving Cytogenetic Search with GPUs Using Different String Matching Schemes (Spotlight)

Chantana Chantrapornchai and Chidchanok Choksuchat

Secure Computation of Skyline Query in MapReduce

Asif Zaman, Md Anisuzzaman Siddique, Annisa and Yasuhiko Morimoto

Extreme User and Political Rumor Detection on Twitter

Cheng Chang, Yihong Zhang, Claudia Szabo and Quan Z. Sheng

Real-time Stream Mining Electric Power Consumption Data Using Hoeffding Tree with Shadow Features

Simon Fong, Meng Yuen, Raymond K. Wong, Wei Song and Kyungeun Cho

Session 5-2: Propagation and Recommendation

1:30pm – 3:00pm, Apollo Room 3

Session Chair:

CEIoT: A Framework for Interlinking Smart Things in the Internet of Things (Spotlight)

Ali Shemshadi, Quan Z. Sheng, Yongrui Qin and Ali Alzubaidi

Recommending Features of Mobile Applications for Developer

Hong Yu, Yahong Lian, Shuotao Yang, Linlin Tian and Xiaowei Zhao

MetricRec: Metric Learning for Cold-Start Recommendations

Furong Peng, Xuan Lu, Jianfeng Lu, Richard Yi-Da Xu, Cheng Luo, Chao Ma and Jingyu Yang

DAPFC: Density-Based Affinity Propagation for Parameter Free Clustering

Hanning Yuan, Shuliang Wang, Yang Yu and Ming Zhong

3:00pm Afternoon Tea

Demo Session

3:30pm

Apollo Room 1

3:30pm – 5:00pm

Parallel Paper Presentations

Session 6-1: Real-life Applications

3:30pm – 5:00pm, Apollo Room 2

Session Chair:

Recognizing Daily Living Activity Using Embedded Sensors in Smartphone: A Data-Driven Approach (Spotlight)

Wenjie Ruan, Leon Chea, Quan Z. Sheng and Lina Yao

Time Series Forecasting on Engineering Systems Using Recurrent Neural Networks

Dongxu Shao, Tianyou Zhang, Kamal Mannar and Yue Han

Deriving Public Sector Workforce Insights: A Case Study Using Australian Public Sector Employment Profiles

Shameek Ghosh, Yi Zheng, Thorsten Lammers, Yinying Chen, Carolyn Fitzmaurice, Scott Johnston and Jinyan Li

PUEPro: A Computational Pipeline for Prediction of Urine Excretory Proteins

Yan Wang, Wei Du, Yanchun Liang, Xin Chen, Chi Zhang, Wei Pang and Ying Xu

Session 6-2: Propagation and Recommendation

3:30pm – 5:00pm, Apollo Room 3

Session Chair:

Mining Distinguishing Customer Focus Sets for Online Shopping Decision Support (Spotlight)

Lu Liu, Lei Duan, Hao Yang, Jyrki Nummenmaa, Guozhu Dong, and Pan Qin

Adaptive Multi-objective Swarm Crossover Optimization for Imbalanced Data Classification



Jinyan Li, Simon Fong and Raymond K. Wong

Unsupervised Component-Wise EM Learning for Finite Mixtures of Skew T-Distributions

Sharon X. Lee and Geoffrey J. McLachlan

Partitioning Clustering Based on Support Vector Ranking

Qing Peng, Yan Wang, Ge Ou, Yuan Tian, Lan Huang, and Wei Pang

Demo Papers:

IRS-HD: An Intelligent Personalized Recommender System for Heart Disease Patients in a Tele-Health Environment

Raid Lafta, Ji Zhang, Xiaohui Tao, Yan Li, and Vincent S. Tseng

Sentiment Analysis for Depression Detection on Social Networks

Xiaohui Tao, Xujuan Zhou, Ji Zhang, and Jianming Yong

Traffic Flow Visualization Using Taxi GPS Data

Xiujuan Xu, Zhenzhen Xu, and Xiaowei Zhao

CONFERENCE DAY 3

Wednesday 14 DEC 2016 – AMDA & SCS

Mantra Legends Hotel, 25 Laycock St, Surfers Paradise
Gold Coast

TIME	Function	Location
7:30am	Registration – AMDA/CSC	Reception
8:30am	CSC Opening Session	Apollo Room 2&3
9:00am	Keynote Speech <i>Analytics and A New Approach to Strategic Workforce Management in the NSW Public Sector</i> Scott Johnston <i>Director Workforce Information NSW Public Service Commission, Australia</i>	Apollo Room 2&3
10:00am	Morning Tea	
10:30am		

10:30am – 12:10

Parallel Paper Presentations

Session 7-1: Social Media Mining

10:30am – 12:10, Apollo Room 2

Session Chair:

Understanding Behavioral Differences between Short and Long-term Drinking Abstainers from Social Media

Haripriya Harikumar, Thin Nguyen, Sunil Gupta, Santu Rana, Ramachandra Kaimal and Svetha Venkatesh

Got a Complaint?- Keep Calm and Tweet It!

Nitish Mittal, Swati Agarwal and Ashish Sureka

Temporal Interaction Biased Community Detection in Social Networks

Noha Alduaiji, Jianxin Li, Amitava Datta, Wei Liu and Xiaolu Lu

EDAHT: An Expertise Degree Analysis Model for Mass Comments in the E-Commerce System

Jiang Zhong, You Xiong, Weili Guo and Jingyi Xie.

Session 7-2: Algorithms and Applications

10:30am – 12:10, Apollo Room 3

Session Chair:

A Scalable Document-based Architecture for Text Analysis

Ciprian-Octavian Truică, Jérôme Darmont and Julien Velcin

Unified Weighted Label Propagation Algorithm Using Connection Factor

Xin Wang, Songlei Jian, Kai Lu and Xiaoping Wang

Supervised Feature Selection by Robust Sparse Reduced-Rank Regression

Rongyao Hu, Wei He, Shichao Zhang, Xiaofeng Zhu and Jilian Zhang

Global Recursive based Node Importance Evaluation

Lu Zhao, Li Xiong and Shan Xue

Real-time Investigation of Flight Delays Based on the Internet of Things Data

Abdulwahab Aljubairy, Ali Shemshadi and Quan Z. Sheng

12:10pm Lunch

01:20pm

Session 8: Social applications using administrative data

1:30pm – 3 :00, Apollo Room 2&3

Session Chair:

A spatial data mining approach to identify and understand neighbourly disorders

The University of Queensland, Australia

Dr. Liu Yan

Identifying aberrant temporal trends using Bayesian statistics

Queensland University of Technology, Australia

Dr. Duncan Earl

Bayesian Hierarchical Negative Binomial Clustering Processes for Terrorist Activity

Queensland University of Technology, Australia

Dr. White Gentry

3:00pm Afternoon Tea



<http://cs.adelaide.edu.au/~adma2016/index.html>

Session 9: Invited Talk

3:30pm – 5:00pm, Apollo Room 2&3

Session Chair:

Cost Effective Data Placement in the Cloud for Efficient Access of Online Social Networks

Swinburne University of Technology, Australia

Professor Yun Yang

Unsupervised Multi-Author Document Decomposition based on Hidden Markov Model

University of Technology Sydney, Australia

Professor Xiangjian (Sean) He

Learning Personalized Ontology for Interpretation of Text Mining Results

Queensland University of Technology, Australia

Professor Yuefeng Li

7:30pm Banquet and Award Function – ADMA & CSC

Q1 Skypoint

Floor 78 - 3/3003 Surfers Paradise Blvd, Surfers Paradise QLD 4217

Observation Deck

CONFERENCE DAY 4

Thursday 15 DEC 2016 – SCS

Mantra Legends Hotel, 25 Laycock St, Surfers Paradise
Gold Coast

TIME	Function	Location
8:00am	Registration - CSC	Reception
9:00am	Querying, Exploring and Mining Geospatial Social Media Data A/Prof. Gao Cong <i>School of Computer Engineering Nanyang Technological University</i>	Apollo Room 2&3
10:00am	Morning Tea	
10:30		

Session 10: Invited Talk

10:30am – 12 :00am, Apollo Room 2&3

Session Chair:

TBA

National University of Defences Technology, China
Professor Yan Jia

Mobile Crowd Sensing : Problems and Explorations

Beijing University of Posts and Telecommunications, China
Professor Huadong MA

Heterogeneous information network analysis and its application in recommendation

Beijing University of Posts and Telecommunications, China
Professor Chuan Shi

12:30pm Lunch

Session 11: Invited Talk

10:30am – 12 :00am, Apollo Room 2&3

Session Chair:

Subjective Well Being Measurement based on Chinese Texts from Social Media

Shanghai University, China

Professor Jiayin Qi

Twitter Analytics: information credibility, sentiment analysis and event

RMIT University, Australia

A/Prof. Xiuzhen (Jenny) Zhang

Discovering Community Narratives: Making sense of big qualitative data

The University of Queensland, Australia

Dr. Andrew Smith

3:00pm Afternoon Tea

Session 12: Panel Discussion and Invited talk

3:30am – 5 :00am, Apollo Room 2&3

Session Chair:

Availability and access to big social data for research in Australia and China- where are we, what next

Prof. Xue Li, Prof. Michele Haynes and Prof, Yan Jia

Ethics and Privacy Considerations for using Social Data to address Big Social Problems

The University of Queensland, Australia

Prof. Michele Haynes

5:00pm **Close Session – ADMA & CSC**

Prof. Michael Sheng

Apollo Room 2&3