## Contents – Part II

### Crowdsourcing and Crowdsensing

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real-Time Target Tracking Through Mobile Crowdsensing</td>
<td>3</td>
</tr>
</tbody>
</table>
  *Jinyu Shi and Weijia Jia* |
| Crowdsourced Entity Alignment: A Decision Theory Based Approach | 19 |
  *Yan Zhuang, Guoliang Li, and Jianhua Feng* |
| A QoS-Aware Online Incentive Mechanism for Mobile Crowd Sensing | 37 |
  *Hui Cai, Yanmin Zhu, and Jiadi Yu* |
| Iterative Reduction Worker Filtering for Crowdsourced Label Aggregation | 46 |
  *Jiyi Li and Hisashi Kashima* |

### Web Data Model

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semantic Web Datatype Inference: Towards Better RDF Matching</td>
<td>57</td>
</tr>
</tbody>
</table>
  *Irvin Dongo, Yudith Cardinale, Firas Al-Khalil, and Richard Chbeir* |
| Cross-Cultural Web Usability Model | 75 |
  *Rukshan Alexander, David Murray, and Nik Thompson* |
| How Fair Is Your Network to New and Old Objects?: A Modeling of Object Selection in Web Based User-Object Networks | 90 |
  *Anita Chandra, Himanshu Garg, and Abyayananda Maiti* |
| Modeling Complementary Relationships of Cross-Category Products for Personal Ranking | 98 |
  *Wenli Yu, Li Li, Fei Hu, Fan Li, and Jinjing Zhang* |

### Language Processing and Web Protocols

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eliminating Incorrect Cross-Language Links in Wikipedia</td>
<td>109</td>
</tr>
</tbody>
</table>
  *Nacéra Bennacer, Francesca Bugiotti, Jorge Galicia, Mariana Patricio, and Gianluca Quercini* |
| Combining Local and Global Features in Supervised Word Sense Disambiguation | 117 |
  *Xue Lei, Yi Cai, Qing Li, Haoran Xie, Ho-fung Leung, and Fu Lee Wang* |
A Concurrent Interdependent Service Level Agreement Negotiation Protocol in Dynamic Service-Oriented Computing Environments. 132
   Lei Niu, Fenghui Ren, and Minjie Zhang

A New Static Web Caching Mechanism Based on Mutual Dependency Between Result Cache and Posting List Cache 148
   Thanh Trinh, Dingming Wu, and Joshua Zhexue Huang

Web-Based Applications

A Large-Scale Visual Check-In System for TV Content-Aware Web with Client-Side Video Analysis Offloading 159
   Shuichi Kurabayashi and Hiroki Hanaoka

A Robust and Fast Reputation System for Online Rating Systems 175
   Mohsen Rezvani and Mojtaba Rezvani

The Automatic Development of SEO-Friendly Single Page Applications Based on HIJAX Approach 184
   Siamak Hatami

Towards Intelligent Web Crawling – A Theme Weight and Bayesian Page Rank Based Approach 192
   Yan Tang, Lei Wei, Wangsong Wang, and Pengcheng Xuan

Data Storage and Generator

Efficient Multi-version Storage Engine for Main Memory Data Store 205
   Jinwei Guo, Bing Xiao, Peng Cai, Weining Qian, and Aoying Zhou

WeDGeM: A Domain-Specific Evaluation Dataset Generator for Multilingual Entity Linking Systems 221
   Emrah Inan and Oguz Dikenelli

Extracting Web Content by Exploiting Multi-Category Characteristics 229
   Qian Wang, Qing Yang, Jingwei Zhang, Rui Zhou, and Yanchun Zhang

Security and Privacy

PrivacySafer: Privacy Adaptation for HTML5 Web Applications 247
   Georgia M. Kapitsaki and Theodoros Charalambous

Anonymity-Based Privacy-Preserving Task Assignment in Spatial Crowdsourcing 263
   Yue Sun, An Liu, Zhixu Li, Guanfeng Liu, Lei Zhao, and Kai Zheng
Understanding Evasion Techniques that Abuse Differences Among JavaScript Implementations ........................................ 278
   Yuta Takata, Mitsuaki Akiyama, Takeshi Yagi, Takeo Hariu, and Shigeki Goto

Mining Representative Patterns Under Differential Privacy ..................... 295
   Xiaofeng Ding, Long Chen, and Hai Jin

A Survey on Security as a Service ................................................. 303
   Wenyuan Wang and Sira Yongchareon

Sentiment Analysis

Exploring the Impact of Co-Experiencing Stressor Events for Teens Stress Forecasting ................................................................. 313
   Qi Li, Liang Zhao, Yuanyuan Xue, Li Jin, and Ling Feng

SGMR: Sentiment-Aligned Generative Model for Reviews ..................... 329
   He Zou, Litian Yin, Dong Wang, and Yue Ding

An Ontology-Enhanced Hybrid Approach to Aspect-Based Sentiment Analysis .................................................. 338
   Daan de Heij, Artiom Troyanovsky, Cynthia Yang, Milena Zychlinsky Scharff, Kim Schouten, and Flavius Frasincar

DARE to Care: A Context-Aware Framework to Track Suicidal Ideation on Social Media ........................................... 346
   Bilel Moulahi, Jérôme Azé, and Sandra Bringay

Recommender Systems

Local Top-N Recommendation via Refined Item-User Bi-Clustering ....... 357
   Yuheng Wang, Xiang Zhao, Yifan Chen, Wenjie Zhang, and Weidong Xiao

HOMMIT: A Sequential Recommendation for Modeling Interest-Transferring via High-Order Markov Model ................. 372
   Yang Xu, Xiaoguang Hong, Zhaohui Peng, Yupeng Hu, and Guang Yang

Modeling Implicit Communities in Recommender Systems ................. 387
   Lin Xiao and Gu Zhaoquan

Coordinating Disagreement and Satisfaction in Group Formation for Recommendation ........................................ 403
   Lin Xiao and Gu Zhaoquan
Factorization Machines Leveraging Lightweight Linked Open Data-Enabled Features for Top-N Recommendations

Guangyuan Piao and John G. Breslin


Xuehui Mao, Shizhong Yuan, Weimin Xu, and Daming Wei

Auxiliary Service Recommendation for Online Flight Booking

Hongyu Lu, Jian Cao, Yudong Tan, and Quanwu Xiao

How Does Fairness Matter in Group Recommendation

Lin Xiao and Gu Zhaoquan

Exploiting Users’ Rating Behaviour to Enhance the Robustness of Social Recommendation

Zizhu Zhang, Weiliang Zhao, Jian Yang, Surya Nepal, Cecile Paris, and Bing Li

Special Sessions on Security and Privacy

A Study on Securing Software Defined Networks

Raihan Ur Rasool, Hua Wang, Wajid Rafique, Jianming Yong, and Jinli Cao

A Verifiable Ranked Choice Internet Voting System

Xuechao Yang, Xun Yi, Caspar Ryan, Ron van Schyndel, Fengling Han, Surya Nepal, and Andy Song

Privacy Preserving Location Recommendations

Shahriar Badsha, Xun Yi, Ibrahim Khalil, Dongxi Liu, Surya Nepal, and Elisa Bertino

Botnet Command and Control Architectures Revisited: Tor Hidden Services and Fluxing

Marios Anagnostopoulos, Georgios Kambourakis, Panagiots Drakatos, Michail Karavolos, Sarantis Kotsilitis, and David K.Y. Yau

My Face is Mine: Fighting Unpermitted Tagging on Personal/Group Photos in Social Media

Lihong Tang, Wanlun Ma, Sheng Wen, Marthie Grobler, Yang Xiang, and Wanlei Zhou

Cryptographic Access Control in Electronic Health Record Systems: A Security Implication

Pasupathy Vimalachandran, Hua Wang, Yanchun Zhang, Guangping Zhuo, and Hongbo Kuang
SDN-based Dynamic Policy Specification and Enforcement for Provisioning SECaaS in Cloud

Uday Tupakula, Vijay Varadharajan, and Kallol Karmakar

Topic Detection with Locally Weighted Semi-supervised Collective Learning

Ye Wang, Yong Quan, Bin Zhou, Yanchun Zhang, and Min Peng

Author Index

Contents – Part II XVII
Contents – Part I

Microblog Data Analysis

A Refined Method for Detecting Interpretable and Real-Time Bursty Topic in Microblog Stream .................................................. 3
  Tao Zhang, Bin Zhou, Jiuming Huang, Yan Jia, Bing Zhang, and Zhi Li

Connecting Targets to Tweets: Semantic Attention-Based Model for Target-Specific Stance Detection ........................................... 18
  Yiwei Zhou, Alexandra I. Cristea, and Lei Shi

A Network Based Stratification Approach for Summarizing Relevant Comment Tweets of News Articles ............................... 33
  Roshni Chakraborty, Maitry Bhavsar, Sourav Dandapat, and Joydeep Chandra

Interpreting Reputation Through Frequent Named Entities in Twitter ................................................................. 49
  Nacéra Bennacer, Francesca Bugiotti, Moditha Hewasinghage, Suela Isaj, and Gianluca Quercini

Social Network Data Analysis

Discovering and Tracking Active Online Social Groups ......................... 59
  Md Musfique Anwar, Chengfei Liu, Jianxin Li, and Tarique Anwar

Dynamic Relationship Building: Exploitation Versus Exploration on a Social Network .................................................. 75
  Bo Yan, Yang Chen, and Jiamou Liu

Social Personalized Ranking Embedding for Next POI Recommendation .... 91
  Yan Long, Pengpeng Zhao, Victor S. Sheng, Guanfeng Liu, Jiajie Xu, Jian Wu, and Zhiming Cui

Assessment of Prediction Techniques: The Impact of Human Uncertainty ... 106
  Kevin Jasberg and Sergej Sizov

Data Mining

Incremental Structural Clustering for Dynamic Networks .................... 123
  Yazhong Chen, Rong-Hua Li, Qiangqiang Dai, Zhenjun Li, Shaojie Qiao, and Rui Mao
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extractive Summarization via Overlap-Based Optimized Picking</td>
<td>135</td>
</tr>
<tr>
<td>Gaokun Dai and Zhendong Niu</td>
<td></td>
</tr>
<tr>
<td>Spatial Information Recognition in Web Documents</td>
<td>150</td>
</tr>
<tr>
<td>Using a Semi-supervised Machine Learning Method</td>
<td></td>
</tr>
<tr>
<td>Hendi Lie, Richi Nayak, and Gordon Wyeth</td>
<td></td>
</tr>
<tr>
<td>When Will a Repost Cascade Settle Down?</td>
<td>165</td>
</tr>
<tr>
<td>Chi Chen, HongLiang Tian, Jie Tang, and ChunXiao Xing</td>
<td></td>
</tr>
<tr>
<td><strong>Pattern Mining</strong></td>
<td></td>
</tr>
<tr>
<td>Mining Co-location Patterns with Dominant Features</td>
<td>183</td>
</tr>
<tr>
<td>Yuan Fang, Lizhen Wang, Xiaoxuan Wang, and Lihua Zhou</td>
<td></td>
</tr>
<tr>
<td>Maximal Sub-prevalent Co-location Patterns and Efficient Mining</td>
<td>199</td>
</tr>
<tr>
<td>Algorithms</td>
<td></td>
</tr>
<tr>
<td>Lizhen Wang, Xuguang Bao, Lihua Zhou, and Hongmei Chen</td>
<td></td>
</tr>
<tr>
<td>Overlapping Communities Meet Roles and Respective Behavioral Patterns</td>
<td>215</td>
</tr>
<tr>
<td>in Networks with Node Attributes</td>
<td></td>
</tr>
<tr>
<td>Gianni Costa and Riccardo Ortale</td>
<td></td>
</tr>
<tr>
<td>Efficient Approximate Entity Matching Using Jaro-Winkler Distance</td>
<td>231</td>
</tr>
<tr>
<td>Yaoshu Wang, Jianbin Qin, and Wei Wang</td>
<td></td>
</tr>
<tr>
<td><strong>Cloud Computing</strong></td>
<td></td>
</tr>
<tr>
<td>Long-Term Multi-objective Task Scheduling with Diff-Serv in Hybrid</td>
<td>243</td>
</tr>
<tr>
<td>Clouds</td>
<td></td>
</tr>
<tr>
<td>Puheng Zhang, Chuang Lin, Wenzhuo Li, and Xiao Ma</td>
<td></td>
</tr>
<tr>
<td>Online Cost-Aware Service Requests Scheduling in Hybrid Clouds for</td>
<td>259</td>
</tr>
<tr>
<td>Cloud Bursting</td>
<td></td>
</tr>
<tr>
<td>Yanhua Cao, Li Lu, Jiadi Yu, Shiyou Qian, Yanmin Zhu, Minglu Li,</td>
<td></td>
</tr>
<tr>
<td>Jian Cao, Zhong Wang, Juan Li, and Guangtao Xue</td>
<td></td>
</tr>
<tr>
<td>Adaptive Deployment of Service-Based Processes into Cloud Federations</td>
<td>275</td>
</tr>
<tr>
<td>Chahrazed Labba, Nour Assy, Narjès Bellamine Ben Saoud, and Walid</td>
<td></td>
</tr>
<tr>
<td>Gaaloul</td>
<td></td>
</tr>
<tr>
<td>Towards a Public Cloud Services Registry</td>
<td>290</td>
</tr>
<tr>
<td>Ahmed Mohammed Ghamry, Asma Musabah Alkalbani, Vu Tran, Yi-Chan Tsai,</td>
<td></td>
</tr>
<tr>
<td>My Ly Hoang, and Farookh Khadeer Hussain</td>
<td></td>
</tr>
</tbody>
</table>
Query Processing

Location-Based Top-k Term Querying over Sliding Window

Ying Xu, Lisi Chen, Bin Yao, Shuo Shang, Shunzhi Zhu, Kai Zheng, and Fang Li

A Kernel-Based Approach to Developing Adaptable and Reusable Sensor Retrieval Systems for the Web of Things

Nguyen Khoi Tran, Quan Z. Sheng, M. Ali Babar, and Lina Yao

Reliable Retrieval of Top-k Tags

Yong Xu, Reynold Cheng, and Yudian Zheng

Estimating Support Scores of Autism Communities in Large-Scale Web Information Systems

Nguyen Thin, Nguyen Hung, Svetha Venkatesh, and Dinh Phung

Spatial and Temporal Data

DTRP: A Flexible Deep Framework for Travel Route Planning

Jie Xu, Chaozhuo Li, Senzhang Wang, Feiran Huang, Zhoujun Li, Yueying He, and Zhonghua Zhao

Taxi Route Recommendation Based on Urban Traffic Coulomb’s Law

Zheng Lyu, Yongxuan Lai, Kuan-Ching Li, Fan Yang, Minghong Liao, and Xing Gao

Efficient Order-Sensitive Activity Trajectory Search

Kaiyang Guo, Rong-Hua Li, Shaojie Qiao, Zhenjun Li, Weipeng Zhang, and Minhua Lu

Time Series Classification by Modeling the Principal Shapes

Zhenguo Zhang, Yanlong Wen, Ying Zhang, and Xiaojie Yuan

Effective Caching of Shortest Travel-Time Paths for Web Mapping Mashup Systems

Detian Zhang, An Liu, Gangyong Jia, Fei Chen, Qing Li, and Jian Li

Graph Theory

Discovering Hierarchical Subgraphs of K-Core-Truss

Zhen-jun Li, Wei-Peng Zhang, Rong-Hua Li, Jun Guo, Xin Huang, and Rui Mao

Efficient Subgraph Matching on Non-volatile Memory

Yishu Shen and Zhaonian Zou
Influenced Nodes Discovery in Temporal Contact Network 472
   Jinjing Huang, Tianqiao Lin, An Liu, Zhixu Li, Hongzhi Yin,
   and Lei Zhao

Tracking Clustering Coefficient on Dynamic Graph via Incremental
Random Walk 488
   Qun Liao, Lei Sun, Yunpeng Yuan, and Yulu Yang

Event Detection

Event Cube – A Conceptual Framework for Event Modeling and Analysis 499
   Qing Li, Yun Ma, and Zhenguo Yang

Cross-Domain and Cross-Modality Transfer Learning for Multi-domain
and Multi-modality Event Detection 516
   Zhenguo Yang, Min Cheng, Qing Li, Yukun Li, Zehang Lin,
   and Wenyin Liu

Determining Repairing Sequence of Inconsistencies
in Content-Related Data 524
   Yuefeng Du, Derong Shen, Tiezheng Nie, Yue Kou, and Ge Yu

Author Index 541
Web Information Systems Engineering – WISE 2017
18th International Conference, Puschino, Russia,
October 7-11, 2017, Proceedings, Part II
2017, XXII, 576 p. 167 illus., Softcover
ISBN: 978-3-319-68785-8