# Contents

## International Workshop on Web Intelligence and Learning

A Web-Based Virtual Lab Platform for Algorithm Learning ........................................... 3  
*Yu Sheng, Wei Zhou, and Jianxin Wang*

A Genetic Algorithm-Based Multiple Characteristics Grouping Strategy  
for Collaborative Learning .......................................................................................... 11  
*Hui-Wen Tien, Yu-Shih Lin, Yi-Chun Chang, and Chih-Ping Chu*

Adaptation Based on Navigation Type and Learning Style ................................. 23  
*Nabila Bousbia, Amina Gheffar, and Amar Balla*

A Novel Recommendation Relevancy Measure for Collaborative Filtering . . . 32  
*Bo Shu, Zhendong Niu, Chunxia Zhang, Xiaotian Jiang, Hongping Fu,  
and Wei Chen*

Automatic Clustering of Research Articles Using Domain Ontology  
and Fuzzy Logic ....................................................................................................... 42  
*Ramanathan Periakaruppan and Rethinaswamy Nadarajan*

Model of Teachers’ Personalized Decision Making on Activities  
and Resources in Web-Based Training ................................................................. 52  
*Kai-li Wang and Wen-ya Liu*

## International Symposium on Knowledge Management and E-Learning

Analyzing Learning Flows in Digital Learning Ecosystems ............................. 63  
*Maka Eradze, Kai Pata, and Mart Laanpere*

Research Trends of Language Learning in Virtual Reality from 2003 to 2012:  
A Content Analysis .................................................................................................... 73  
*Tsun-Ju Lin, Yu-Ju Lan, and Yu-Hsuan Kan*

## International Workshop on Ubiquitous Social Learning

An Interactive 3D Social Graphs for Social Learning ........................................ 85  
*Noorkholis Luthfil Hakim, Shun-Kai Wang, Timothy K. Shih,  
Wu-Yuin Hwang, Yu-Ren Chen, and Ankhtuya Ochirbat*

Improving KeyNote Trust Management Model Based on User Behavior  
for Social Learning .................................................................................................. 96  
*Rui Xu, Guangquan Xu, Dazhi Sun, Xiaohong Li, and Zhiyong Feng*
XXII Contents

International Workshop on E-Book and Education Cloud

Enhancing Teamwork Performance in Mobile Cloud-Based Learning .......... 107
  Geng Sun and Jun Shen

An E-Book Based Competitive Learning System for Conducting Mobile
Plants Learning Activities to Improving Student Learning Outcome .......... 118
  Hsueh-Liang Lin, Chen-Chien Fang, Yen-Ning Su, Chia-Cheng Hsu,
  Ming-Yi Shih, and Yueh-Min Huang

The E-Book Learning System with Problem-Based Learning in a Public
Health Nursing Practice Course ................................................. 128
  Shu-Hsien Huang, Ting-Ting Wu, and Yueh-Min Huang

Increasing Students’ Vocabulary Size Through the Use of Latent Semantic
Analysis in a Mobile Learning Environment .................................. 136
  Yu-Fang Chiou, Bor-Chen Kuo, and Chen-Huei Liao

Analyzing Immersion in Digital Game-Based E-Book Learning Through
Learners’ Facial Expressions ....................................................... 145
  Hong-Ren Chen, Qing-Fu Chen, and Yeng-Lin Lu

International Workshop on Cloud Computing for Web-Based Learning

The Learning Effect of Students’ Cognitive Styles in Using
Cloud Technology ........................................................................... 155
  Ching-Hung Yeh and Chia-Cheng Hsu

Framework of Supporting Structured Game Script Learning System ........... 164
  Feng-Jung Liu and Chun-Wei Tseng

Performance Analysis Using Petri Net Based MapReduce Model
in Heterogeneous Clusters ................................................................ 170
  Sheng-Tzong Cheng, Hsi-Chuan Wang, Yin-Jun Chen, and Chen-Fei Chen

Integration of MapReduce with an Interactive Boosting Mechanism
for Image Background Subtraction in Cultural Sightseeing .................... 180
  Sheng-Tzong Cheng, Yin-Jun Chen, Yu-Ting Wang, and Chen-Fei Chen

An Weighted-Content Strategy for Integrating Heterogeneous Itembanks ..... 192
  Shih-Pang Tseng, Wen-Hsiang Fu, and Chu-Sing Yang

Teaching Effectively with the Multi-screen Multimedia Integrated System ... 201
  Tsung-Sheng Cheng, Yu-Chun Lu, and Chu-Sing Yang
International Workshop on Smart Living and Learning

Preliminary Investigation of Interactive Behaviors in Distant Collaborative Exergame ................................................. 213
   Wu-Yuin Hwang, Kanoksak Wattanachote, Timothy K. Shih, Shih-Ching Yeh, and Shi-Yi Zhan

Second Heart Sound (S2) Decomposition by Hilbert Vibration Decomposition (HVD) for Affective Signal Modeling and Learning ................................................................. 223
   Shovan Barma, Bo-Wei Chen, Hung-Ming Wang, Hung-Jui Wang, and Jhing-Fa Wang

Clustering XML Documents for Web Based Learning .......................... 234
   Ramanathan Periakaruppan and Rethinaswamy Nadarajan

Cultural Sensitivity Training Task: An Avenue of Enhancing Students’ Cultural Awareness and Its Perspectives of Web-Based Learning .......................... 244
   Jaw-Shyang Wu, Tun-Wei Chuo, and Shu-Chin Yen

Web-Based-Learning via Tajen Cloud ................................................. 253
   Wu-Wen Lin and Chiou-Mei Chen

Complementary to Web-Based Education on Summer Camp of Marine Energy ................................................................. 259
   Chung-Liang Chen and Wu-Wen Lin

Web-Based Ubiquitous Learning ................................................... 265
   Chiou-Mei Chen and Wu-Wen Lin

A Virtual Reality Based Training System for Cultural Tourism .......... 272
   Shih-Pang Tseng, Mei-Wen Huang, Hsu-Jung Liu, Chao-Cheng Chung, and Chun-Mei Chiu

Author Index ................................................................. 279
Advances in Web-Based Learning – ICWL 2013
Workshops
USL 2013, IWSLL 2013, KMELE 2013, IWCLW 2013, WIL 2013, and IWEELC 2013, Kenting, Taiwan, October 6-9, 2013, Revised Selected Papers
2015, XXIII, 280 p. 130 illus., Softcover
ISBN: 978-3-662-46314-7