# 2018 Thirteenth International **Conference on Digital Information Management (ICDIM 2018)**

Berlin, Germany 24 – 26 September 2018



**IEEE Catalog Number:** CFP18DIM-POD **ISBN:** 

978-1-5386-5245-9

## Copyright $\odot$ 2018 by the Institute of Electrical and Electronics Engineers, Inc. All Rights Reserved

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

\*\*\* This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.

 IEEE Catalog Number:
 CFP18DIM-POD

 ISBN (Print-On-Demand):
 978-1-5386-5245-9

 ISBN (Online):
 978-1-5386-5244-2

#### **Additional Copies of This Publication Are Available From:**

Curran Associates, Inc 57 Morehouse Lane Red Hook, NY 12571 USA Phone: (845) 758-0400

Fax: (845) 758-2633

E-mail: curran@proceedings.com Web: www.proceedings.com



## **ICDIM 2018**



### Thirteenth International Conference on Digital Information Management (ICDIM 2018)



Berlin, Germany September 24-26, 2018





#### Contents

Machine Learning
Lung cancer medical image recognition using Deep Neural Networks (MB)
Goran Jakimovski, Danco Davcev
A Literature Analysis for the Identification of Machine Learning and Feature Extraction Methods for Sentiment Analysis (#B
Markus Haberzettl, Bernd MARKSCHEFFEL
Deep Learning in Classifying Sleep Stages WB4
Mohamed H. Al Meer MD, Abdullah Al Mamun
Smart parking system - another way of sharing economy provided by private institutions@B:
Simona-Daniela Marcu, Adrian Florea
User Profile Feature-Based Approach to Address the Cold Start Problem in Collaborative Filtering for Personalized Movie Recommendation (III)
Lasitha Uyangoda, Supunmali Ahangama and Tharindu Ranasinghe
Natural Language Processing
Text classification based on LSTM and attention 0004;
Xuemei Bai
A Summary Of Using Reinforcement Learning Strategies For Treating Project And Production Management Problems@55
Georgios Koulinas, Alexandros Xanthopoulos, Athanasios Kiatipis, Dimitrios Koulouriotis
Ontology of Academic Sentence Dependencies for a Verb Choice Suggestion(W5;
Sarunya Kanjanawattana, Sarunya Kanjanawattana
K2 platform in Business process management@67
Ivana Ogrizek Biskupic, Robert Arapovic, Mateo Jurcic
Exploiting Function Words Feature in Classifying Deceptive and Truthful Reviews(##73

Al Hafiz Akbar Maulana Siagian, Masayoshi Aritsugi
Sensitivity of Estimators for Measuring Information Amount in Web-Based Medical Documents (M79)
Jolanta MIZERA-PIETRASZKO
Learning Patent Speak: Investigating Domain-Specific Word Embeddings (#85
Julian Risch, Ralf Krestel
Improved TFIDF weighting techniques in document Retrieval@8;
Fadi Yamout, Rachad Lakkis
Towards scalable standards for web content usability (#196
Pit Pichappan, P.Vijayakumar
Data Mining
SimFiller: Similarity-Based Missing Values Filling Algorithm (1999) Fateh ur Rehman, Muhammad Abbas, Sajjad Murtaza, Wasi Haider Butt, Saad Rehman, Usman Qamar
Attention Based Neural Architecture for Rumor Detection with Author Context Awareness (11) 4
Sansiri Tarnpradab, Kien A. Hua
On the Analysis of a Public Dataset for Diabetes (11):
Abdihakim Mao, M. Omair Shafiq
Compliance at Velocity within a DevOps Environment(M) 6
Muhammad Zaid Abrahams, Josef J Langerman
Development of Autonomous Intelligent System for Google Ads@824
Burcu Kuleli Pak, Bora Mocan, Sema Yıldız Yoldaş, Neşe Baz
Use of virtual private networks (VPN) and proxy servers: Impact of personality and demographics(MB2:
Antonin Pavlicek, Frantisek Sudzina
Botnet Detection in Network System Through Hybrid Low Variance Filter, Correlation Filter and Supervised Mining Process@34
Ferry Astika Saputra, Muhammad Fajar Masputra, Iwan Syarif, Kalamullah Ramli
Multi-Clustering Applied to Collaborative Recommender Systems@83:
Urszula Kuzelewska, Arkadiusz Kuryłowicz

The importance of interaction mechanisms in blended learning courses involving problem solving e-tivities@846
Antonello Venditti, Fausto Fasano, Michele Risi, Genoveffa Tortora
Mining Trajectory Data and Identifying Patterns for Taxi Movement Trips@852
Rami Ibrahim, M. Omair Shafiq
Interacting With Motivational Virtual Agent: The Effects of Message Framing and Regulatory Fit in an E-Learning Environment@858
Tze Wei Liew, Su-Mae Tan, Chin Lay Gan
Grammatical Error Checking Systems: A Review of Approaches and Emerging Directions(#864
Nora Madi, Hend S. Al-Khalifa
Sixth International Workshop on Data Science (IWDS 2018)  Treating Missing Data in Industrial Data Analytics (IIII)
Lisa Ehrlinger, Thomas Grubinger, Bence Varga, Mario Pichler, Thomas Natschlager, Jurgen Zeindl
Machine Learning based Static Code Analysis for Software Quality Assurance (MB78)
Eldar Sultanow, André Ullrich, Stefan Konopik, Gergana Vladova
SVM-RBM based Predictive Maintenance Scheme for IoT-enabled Smart Factory (MB84
Soonsung Hwang, Jongpil Jeong, Youngbin Kang
Sensitivity Based Anonymization with Multi-dimensional Mixed Generalization(#88:
Esther Gachanga, Micheal Kimwele, Lawrence Nderu
Customer Churn Prediction for a Motor Insurance Company (#B95
Maria Spiteri, George Azzopardi
Machine Learning for Predicting the Damaged Parts of a Low Speed Vehicle Crash (MB9;
Milan Koch, Hao Wang, Thomas Back
Human-Computer Interaction  Ontology Coverage Tool and Document Browser for Learning Material Exploration (#B: 7
Christian Grévisse, Jeff Meder, Jean Botev and Steffen Rothkugel
The Effect of Different Type of Information on Trust in Facebook Page (WB; 3
Hasrini Sari, Farhan Mutaqin, Aditya Parama Setiaboedi

A Model-Based Approach to Guide Digital Transformation(MB; 8
Hilda Tellioglu
Lead-Lag Relationship between Investor Sentiment in Social Media, Investor Attention in Google, and Stock Return@426
Aldila Rizkiana, Hasrini Sari, Pameodji Hardjomidjojo, Budhi Prihartono, Indryati Sunaryo, Ilham Reza Prasetyo
The Development and Analysis of TWISH: A Lightweight-Block-Cipher-TWINE-Based Hash Function (III) 432
Deden Irfan Afryansyah, Magfirawaty, Kalamullah Ramli
Data Management and Big Data
PediatricDB: Data Analytics Platform for Pediatric Healthcare (1994) 38
Shantanu Deshmukh, Natalia Khuri
A Flexible Approach to Documenting and Presenting Multimedia Performances Using Motion Capture Data (19)144
Roman Berka, Bohus Ziskal, Zdenek Travnicek
Creating Digital Collages Inspired by English Texts(##)4:
Vandana Kannan, Natalia Khuri
Towards Sustainable Digital Twins for Vertical Farming 1994 56
José Monteiro, João Barata, Marco Veloso, Luis Veloso, João Nunes
A Data-Driven Approach to Vessel Trajectory Prediction for Safe Autonomous Ship Operations (1944)
Brian Murray, Lokukaluge Prasad Perera
Visualization of Eye-Tracking Patterns in Autism Spectrum Disorder: Method and Dataset (##46:
Romuald Carette, Mahmoud Elbattah, Gilles Dequen, Jean-Luc Guérin, Federica Cilia
High Performance RDF Updates with TripleBit+00476
Pingpeng Yuan, Lijian Fan, Hai Jin
True Satisfaction in Product e-Marketing Data-Information- Knowledge Acquisition Evaluation Ontology; with focus on User Satisfaction  Implementation Semantic Mechanism Methodology (##482)
Hani K. M. Abd El-Salam
Conceptualization of a Knowledge Management Framework for Governments: A case of Devolved County Governments in Kenya (1948)

Patrick Kanyi Wamuyu, Joshua Rumo Ndiege
Urdu Text Classification: A comparative study using machine learning techniques (1944) 96
mran Rasheed, Vivek Gupta, Haider Banka, Chiranjeev Kumar
Unsupervised Topic Detection based on 2D Vector Space model using Apriori Algorithm and NLP(II);
Michael George
Workshop on Computing Technology
Blockchain as an enabler for the Social Health Insurance Program in the kingdom of Bahrain (MP IC
Hasan Al-Aswad, Wael Elmedany, Chitra Balakrishna
Distributed Ledger Transformations for Fintech Industry, Challenges, and Opportunities (MP IC Sameer AlJeshi, Ahmed Tarfa, Hasan Al-Aswad, Wael Elmedany, Chitra Balakrishna
A security and performance review of IoT encryption algorithms (MP IC
Hesham Hasan, Ghassan Ali, Wael Elmedany, Chitra Balakrishna
Dynamic Password Generation Using Random Pseudo Noise Compact With Random Mapping Transform Algorithm (MP IC
Saifuldeen Abdulameer Mohammed, Taghreed Mohamed Ali Al- Rufaii, Ammar S. Al-Zubaidi, Abdullah Abd Ali Jassim
Adoption of Bandwidth Management Technique using Dynamic LSP Tunneling and LDP in MPLS for sustainable Mobile Wireless Networks (MP IC
Oba Zubair Mustapha , Yim Fun Hu, Ray E. Sheriff,Raed A. Abd-Alhameed,M. Ali , T. Sigwele
Texture and Medical Image Classification using Wavelet Completed Local Ternary Count (WCLTC) Texture Descriptor (MP IC
Fatimah A.Alkareem, Taha H. Rassem, Mohammed Falah Mohammed
An Automated Ear Detection Method based on Sobel Edge Detection and Image Subtraction Techniques (MP IC
Raad Ahmed Hadi, Loay Edwar George
Thingspeak Cloud Computing Platform Based ECG Diagnose System(MP IC
Auday A.H. Mohamad , Noor Kareem Jumaa, Sameer Hameed Majeed
A Blockchain-Enabled RFID Protocol for Supply Chain Management(#P IC
Charles Mutigwe, Johnson Kinyua
PerLCol: A Framework for Personalized eLearning with Collaboration Support (MP IC
Amal Al-Abri , Naoufel Kraiem , Zuhoor AlKhanjari , Yassine Jamoussi

Function Approximation Using Multilayer SAM Spiking Neural Network (MP IC
Minoru Motoki, Hirohito Shintani, Kazunori Matsuo, Thomas Martin McGinnity
Accessibility or Usability of "InteractSE"? A Heuristic Based Approach to Evaluate Proposed Search Engine for the Visually Impaired Users@P IC
Aboubakr Aqle, Kamran Khowaja, Dena Al-Thani
Implementation and Analysis of a Serverless Shared Drive with AWS Lambda (MP IC
Saloni Gandhi, Anuja Gore, Sakshi Nimbarte, Jibi Abraham
A Low-cost Arduino and Cloud Based In-class Quiz System (MP IC
Yapeng Wang, Sten Li, Xu Yang
Automatic Arabic Part-of-Speech Tagging: A Deep Learning LSTM Neural Network Approach P IC
Khwlah Alrajhi, Mohammed ELAffendi
Financial Risk Prediction based on Neural Networks and Maximum Entropy (MP IC
Abdelali El Bouchti, Younes Tribis, Tarik Nahhal, Chafik Okar
Forecasting Financial Risk using Quantum Neural Networks (#15: 8
Abdelali El Bouchti, Younes Tribis, Tarik Nahhal, Chafik Okar
Average Weights of Eigenvalue Decomposition for Efficient Face Image Processing@P IC
Ali Elmahmudi, Hassan Ugail and Ali Bukar
Security Processes as Machines: A Case Study(MP IC
Sabah Al-Fedaghi, Manal Alsharah
Empirical analysis on the efficiency of clustering algorithms based on the significance of cluster size (IIIP) IC
Sunitha Cheriyan , Shaniba Ibrahim, Susan Treesa
Wavelength Assignment for Conducting Exchanged Folded Hypercube Communication Pattern on Optical Bus@PIC
Yu-Liang Liu
On the Bio-inspired Computational framework for exploring the production and management of sustainable energy (MP IC
Olugbenga Oluwagbemi
Cloud Service Supplier Assessment: A Delphi Study (MP IC

Olusola Akinrolabu, Steve New, Andrew Martin
Protecting the Confidentiality and the Privacy Preservation of the Ghana National Health Insurance Scheme Members (III) IC
Kingsford Kissi Mireku, Zhang FengLi, Komlan Gbongli, Daniel Kotei
Designing an Unmanned Surface Vehicle for Water quality monitoring (MP IC
Xiaohui Zhu, Yong Yue, Rui Liu, Ming Liu, Jiawei Mao, Yawei Hu
An Image Recognition-Based System for Correcting Body Posture(MP IC
Hung-Yuan Chung, Yao-Liang Chung, Chih-Yen Liang
Future Generation of Unmanned Retails and Algorithm-Self(#P IC
Tengyue Li, Simon Fong, Luís Moutinho