2019 Sixth International Conference on Social Networks Analysis, Management and Security (SNAMS 2019)

Granada, Spain 22 – 25 October 2019



IEEE Catalog Number: CFP19R39-POD **ISBN:**

978-1-7281-2947-1

Copyright © 2019 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:	CFP19R39-POD
ISBN (Print-On-Demand):	978-1-7281-2947-1
ISBN (Online):	978-1-7281-2946-4

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



Table of Contents

Keynote speech 1: Misinformation Detection in Online Social Networks using Content Information	1
Keynote speech 2: Cybersecurity and IoT: open challenges and perspectives	2
Keynote speech 3: Blockchain – IoT – AI Trust Nexus	3
Keynote speech 4: An Information Centric Networking Approach to Publish-Subscribe in mobile IoT	4
systems	
Keynote speech 5: Social Network Analysis. Why is it needed? How to do it? What can we expect from	5
it?	
Tutorial: Combining Edge and Cloud for smart cities applications	6
SNAMS2019	
Detection and analysis of medical misbehavior in online forums	7
Elise Bigeard, Natalia Grabar	
Cyber Security in a Complex Community: A Social Media Analysis on Common Vulnerabilities and	13
Exposures	
Madeline Schiappa, Graham J.W. Chantry, Ivan Garibay	
Identifying Influencers using Time Series Analysis	21
Hoda Daou	
Comparison of Lexicon Performances on Unstructured Behavioral Data	28
Yohn Jairo Parra Bautista, Richard Alo, David Olson	20
An Improvement Proposal of Genetic Algorithms Based on Information Entropy and Game Theory Li Jiacheng, Li Lei	36
Identifying Concerned Citizen Communication Style during the State Parliamentary Elections in	44
Bavaria	44
Andr Schmale, Volker Mittendorf	
PrivacyBot: Detecting Privacy Sensitive Information in Unstructured Texts	53
Welderufael B. Tesfay, Jetzabel Serna, Kai Rannenberg	55
Analyzing the Behavior of Twitter Bots in Post Brexit Politics	61
Bello Shehu Bello, Reiko Heckel	01
Semantic Based Question Answering System on Travel Ontology	67
Maria Rahim, Zakia Turabee, Quratulain Rajput, Shakeel Khoja	
On the Role of Score, Genre and Text in Helpfulness of Video Game Reviews on Metacritic	75
Patrick Kasper, Philipp Koncar, Tiago Santos, Christian Gütl	
Tweets Emotion Prediction by Using Fuzzy Logic System	83
Yahya Tashtoush, Dana Orabi	
Resolving Conflict of Interests and Recommending Expert Reviewers for Academic Publications	91
Using Linked Open Data	
Heba Al-Jarrah, Muntaha Al-Asa'D, Saad Al-Zboon, Saja Tawalbeh, Mahmoud Hammad, Mohammad Al-	
Smadi	
MapReduce-based Capsule Networks	99
Sun Jin Park, Ho-Hyun Park	
Using Topical Networks to Detect Editor Communities in Wikipedias	102
Michael Kretschmer, Bernhard Göschlberger, Ralf Klamma	
Self-adaptive Differential Evolution for Community Detection	110
Clara Pizzuti, Annalisa Socievole	
Simmelian ties on Twitter: empirical analysis and prediction	118
Isa Inuwa-Dutse, Mark Liptrott, Yannis Korkontzelos	
Using Social Network Analysis to Study Diversity in Business Partnerships	126
Rola Abdulkarim, Sherief Abdallah	12.1
FACT: a Framework for Twitter Graph Capture and Analysis	134
Daniel Thilo Schroeder, Konstantin Pogorelov, Johannes Langguth	1.40
Social Media Campaign Strategies: Analysis of the 2019 Nigerian Elections Bello Shehu Bello. Isa Inuwa-Dutse. Reiko Heckel	142
DONO SHONU DONO. ISA INUWA-DUISE. NEIKO NEUKEI	

Tracking Changes in Dynamic Social Networks using Event Logs and Network Snapshots	150
Raji Ghawi, Jürgen Pfeffer	150
Content Similarity Analysis of Written Comments under Posts in Social Media Marzieh Mozafari, Reza Farahbakhsh, Noël Crespi	158
Recommendation Based on Learners' Interests in NetLearn System	166
Samira Aouidi, Mahnane Lamia, Mohammed Hafidi	100
Semantic and Topological Graphs for PatentRetrieval	175
André Rattinger, Jean-Marie Le Goff, Christian Guetl	101
Film Factory Losses: is BitTorrent a Major Responsible? Praboda Rajapaksha, Reza Farahbakhsh, Noel Crespi	181
Advantages of Having Users' Trust and Reputation Values on Data Sharing Process in Online Social	189
Networks	107
Gulsum Akkuzu	
Reverse Engineering of Content Delivery Algorithms for Social Media Systems	196
Ittipon Rassameeroj, Shyhtsun Felix Wu	170
Deep Learning Based Extractive Text Summarization: Approaches, Datasets and Evaluation	204
Measures	
Dima Suleiman, Arafat Awajan	
Stemming Effects on Sentiment Analysis using Large Arabic Multi-Domain Resources	211
Samar Alsaqqa, Arafat Awajan, Said Ghoul	
Sampling Online Social Networks with Tailored Mining Strategies	217
Paolo Ceravolo, Arafeh Mouhamad, Ernesto Damiani, Azzam Mourad	
Sentiment analysis of twitter messages using Word2vec by weighted average Kamel Ahsene Djaballah, Kamel Boukhalfa, Omar Boussaid	223
Quality Indicators for Social Business Intelligence	229
Maria Jose Aramburu, Rafael Berlanga, Indira Lanza-Cruz, Maria Jose Aramburu	229
Keywords Extraction from Arabic Documents Using Centrality Measures	237
Wael Etaiwi, Arafat Awajan, Dima Suleiman	237
Document-oriented versus Column-oriented data storage for social graph data warehouse	242
Zakia Challal, Wafaa Bala, Hanifa Mokeddem, Kamel Boukhalfa, Omar Boussaid, Elhadj Benkhelifa	
'On the Shoulders of Giants', Analysis of a Social Network of Intellectual Influence	248
Raji Ghawi, Cindarella Petz, Jürgen Pfeffer	
Population Dynamics in the Iterated Prisoner Dilemma with prior commitment	256
Suhail Odeh, Pasquale Caianiello	
A Sentiment Analysis Approach of Data Volatility for Consumer Satisfaction in the Fashion	262
Industry	
Feras Al-Obeidat, Anoud Bani Hani, Elhadj Benkhelifa, Oluwasegun Adedugbe, Munir Majdalawieh	
BDSN2019	
RelSeeker: Relationship-based query language in a graph database for social networks Jiajia Wu, Yukikazu Nakamoto	268
MTRecS-DLT: Multi-Modal Transport Recommender System using Deep Learning and Tree	274
Mirkets-DET. Multi-Modal Transport Recommender System using Deep Dearning and Tree Models	2/7
Ayat Abedalla, Ali Fadel, Ibraheem Tuffaha, Hani Al-Omari, Mohammad Omari, Malak Abdullah,	
Mahmoud Al-Ayyoub	
Using Popular Search Terms in Stock Price Prediction	279
Izzat Alsmadi, Mahmoud Al-Ayyoub, Mohammad Alsmirat, Yaser Jararweh	
An Emotional Feedback Based on Facial Action Coding System for MOOCs with Computer-Based	286
Assessment	
Mohamed Soltani, Zarzour Hafed, Babahenini Mohamed, Mahmoud Hammad, Mohammad Al-Smadi,	
Yaser Jararweh	
OSNT2019	
Segment-wise users? response prediction based on activity traces in online social networks	291

Segment-wise users? response prediction based on activity traces in online social networks291Oksana Severiukhina, Klavdiya Bochenina291

DSEA2019

Graph-based Feature Selection Filter Utilizing Maximal Cliques	297
Daniel Thilo Schroeder, Kevin Styp-Rekowski, Florian Schmidt, Alexander Acker, Odej Kao	
A Step Towards a Data Quality Theory	303
Anastasija Nikiforova, Janis Bicevskis, Zane Bicevska, Ivo Oditis, Girts Karnitis	
Application of Big Data and Technologies for Integrated Water Resources Management - A Survey Ekkehard Holzbecher, Hind Barghash, Ahmed Hadidi, Khadija Al Balushi	309
Pair Data Division Algorithm For Handling Data Classification	316
Abdul Razaque, Kanapina Auau, Sailaubek Seitzhnovsa ., Seitzhnov Seitzhnovsa, Turganov Vonagrut,	
Tsoy Danatsoy, Muder Almiani	
Clustering interest graphs for customer segmentation problems	321
Ivan Derevitsky, Oksana Severiukhina, Klavdiya Bochenina	
Hyperparameters tuning for machine learning models for time series forecasting	328
Peter Gladilin, Maria Matskevichus	
ANLP2019	
A Word Representation to Improve Named Entity Recognition in Low-resource Languages	333
Michael Franklin Mbouopda, Paulin Melatagia Yonta	
A replicable comparison study of NER software: StanfordNLP, NLTK, OpenNLP, SpaCy, Gate	338
Xavier Schmitt, Sylvain Kubler, Jeremy Robert, Mike Papadakis, Yves LeTraon	
Sentiment Analysis of Finnish Customer Reviews	344
Jouko Vankka, Heikki Myllykoski, Tuomas Peltonen, Ken Riippa	
"Where Is My Parcel?" Fast and Efficient Classifiers to Detect User Intent in Natural Language	351
Constantina Nicolaou, Amal Vaidya, Fabon Dzogang, David Wardrope, Nikos Konstantinidis	
Towards a DRS Parsing Framework for French	357
Le Ngoc Luyen, Haralambous Yannis, Philippe Lenca	
Hybrid CNNs-LSTM Deep Analyzer for Arabic Opinion Mining	364
Marwan Al Omari, Moustafa Al-Hajj, Amani Sabra, Nacereddine Hammami	
DTL2019	
From Accuracy to Versatility: Analysing Text Classification Models regarding Transfer Learning	369
Niklas Stoehr, Luis Sanchez Izquierdo, Daniil Gannota, Fabian Falck	
Time Series Anomaly Detection Based on GAN	375
Yong Sun, Wenbo Yu, Yuting Chen, Aishwarya Kadam	
Automatic Identification of Fake News Using Deep Learning	383
Ethar Qawasmeh, Mais Tawalbeh, Malak Abdullah	
HMiMS2019	
HealthGuard: A Machine Learning-Based Security Framework for Smart Healthcare Systems	389
Akm Iqtidar Newaz, Amit Kumar Sikder, Mohammad Ashiqur Rahman, A. Selcuk Uluagac	
Adaptive Strategies for Patient Monitoring in Mobile Health Applications	397
Mathieu Bagot, Pascale Launay, Frédéric Guidec	
International Cooperation and Coordination for improving Health Systems	405
Damián-Emilio Gibaja-Rome, Rosa-María Cantón-Croda	
Leveraging Graph Models to Design Acute Kidney Injury Disease Research Data Warehouse	413
Ahmad Baghal	
Agile Natural Language Processing Model for Pathology Knowledge Extraction and Integration	419
with Clinical Enterprise Data Warehouse	
Ahmad Baghal, Shaymaa Al-Shukri, Annu Kumari	
CNS2019	
Netword: the network based cognitive model of distributed concrete noun meanings	423
Kaoutar Skiker, Mounir Maouene	

Neural Paraphrasing by Automatically Crawled and Aligned Sentence Pairs Achille Globo, Antonio Trevisi, Andrea Zugarini, Leonardo Rigutini, Marco Maggini, Stefano Melacci	429
Verbal and Non-verbal Markers for the Analysis of Political Discourse Alessandro Maisto, Serena Pelosi, Daniela Trotta	435
Self-Organising and Self-Learning Model for Soybean Yield Prediction	441
Mona Alghamdi, Plamen Angelov, Raul Gimenez, Mariana Rufino, Eduardo Soares	441
Towards a gold standard dataset for Open Information Extraction in Italian	447
Raffaele Guarasci, Emanuele Damiano, Aniello Minutolo, Massimo Esposito	
Inference On The Edge: Performance Analysis of an Image Classification Task Using Off-the-shelf	454
CPUs and Open-Source ConvNets	101
Valentino Peluso, Roberto Giorgio Rizzo, Antonio Cipolletta, Andrea Calimera	
Adaptive Treatment Assisting System for Patients using Machine Learning	460
Muddasar Naeem, Antonio Coronato, Giovanni Paragliola	
SAMSN2019	
Detecting Offensive language on Arabic Social Media using Deep Learning	466
Hanane Mohaouchane, Asmaa Mourhir, Nikola S. Nikolov	
A Novel Twitter Sentiment Analysis Model with Baseline Correlation for Financial Market	472
Prediction with Improved Efficiency	
Xinyi Guo, Jinfeng Li	
A Transfer Learning based Approach for Aspect Based Sentiment Analysis	478
Xing Fang, Jie Tao	
Facilitating On-Line Harmonic Estimation Based on Robust Adaptive RBFNN	484
Eyad Almaita, Jumana Al Shwawreh	
A Multi-agent Design of a Computer Player for Nine Men's Morris Board Game using Deep	489
Reinforcement Learning	
Jafar Abukhait, Ahmad Aljaafreh, Naeem Al-Oudat	
A multi-levels Geo-location based crawling method for social media platforms	494
Shadi Alzubi, Darah Aqel, Ala Mughaid	400
Multi-Label Emotion Classification for Arabic Tweets	499
Shadi Alzubi, Omar Badarneh, Bilal Hawashin, Mahmoud Al-Ayyoub, Nouh Alhindawi, Yaser Jararweh	505
A smart Geo-Location Job Recommender System Based on Social Media Posts Ala Mughaid, Ibrahim Obeidat, Bilal Hawashin, Shadi Alzubi, Darah Aqel	505
Arabic Light Stemming: A Comparative Study between P-Stemmer, Khoja Stemmer, and Light10	511
Stemmer	511
Tarek Kanan, Odai Sadaqa, Ashraf Almhirat, Emran Kanan	
P-Stemmer or NLTK Stemmer for Arabic Text Classification?	516
Mohammed Elbes, Amal Aldajah, Odai Sadaga	010
Predicting Eurovision Song Contest Results by Interpreting the Tweets of Eurovision Fans	521
Dimitri Demergis	
Features Found in Twitter Data and Examination of Retweeting Behavior	529
Shigeo Shioda, Masato Minamikawa	
Random Forest location prediction from social networks during disaster events	535
Rachid Ouaret, Babiga Birregah, Eddie Soulier, Samuel Auclair, Faiza Boulahya	
Automatic Classification of Apps Reviews for Requirement Engineering (Exploring The Customers	541
Need from Healthcare Applications)	
Nadeem Al Kilani, Rami Tailakh, Abualsoud Hanani	
Topics in the Russian Twitter and relations between their interpretability and sentiment	549
Svetlana Bodrunova, Ivan Blekanov, Mikhail Kukarkin	
A Brief Analysis of Amazon Online Reviews	555
Shadi Alzubi, Abdalraheem Alsmadi, Sokyna Alqatawneh, Mahmoud Al-Ayyoub, Bilal Hawashin, Yaser	
Jararweh	= / 1
The Utilization of WhatsApp to Determine the Obsessive-Compulsive Disorder (OCD): A	561
Preliminary Study Solarra Alastawash Shadi Alzuhi Pana Pamadan Fadwa Abalaiga Ikhala Abdal Oadar. Ali Aldahaud	
Sokyna Alqatawneh, Shadi Alzubi, Rana Ramadan, Fadwa Ahalaiqa, Ikhals Abdel-Qader, Ali Aldahoud	

Sociopolitical Network for Ekphrastic Poetry and Algorithmic Co-authoring Nicholas Trefonides, Emmanuel Saake	565
Combining free collaborative and controlled annotation in social media	572
Ivan Garrido Marquez, Adeline Nazarenko, François Lévy	