2019 IEEE Second International Conference on Artificial Intelligence and Knowledge Engineering (AIKE 2019)

Sardinia, Italy 3 – 5 June 2019



IEEE Catalog Number: ISBN:

CFP19P81-POD 978-1-7281-1489-7

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:
 CFP19P81-POD

 ISBN (Print-On-Demand):
 978-1-7281-1489-7

 ISBN (Online):
 978-1-7281-1488-0

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



2019 IEEE Second International Conference on Artificial Intelligence and Knowledge Engineering (AIKE) AIKE 2019

Table of Contents

Messago Organiz	e from the General Co-chairs xii. e from the Program Co-Chairs xiv. zing Committee xv. n Committee xvi	
Session I: Learning I		
Mud Tech Univ	Framework for Neural Architecture Search in the Hill Climbing Domain .1	
Amir Fran	ing SMOTE Sampling and Machine Learning for Forecasting Wheat Yields in France .9	
Man High Man of Te (Man Educ	tic Segmentation of River and Land in SAR Images: A Deep Learning Approach .15	
Giris Educ Acad Tech	c Segmentation of UAV Aerial Videos using Convolutional Neural Networks .21	
Men Jink	il Multi-label Learning .28	

Use of Uncertainty with Autoencoder Neural Networks for Anomaly Detection 32
Session II: Sentiment and Emotion
Multi-agent System Engineering for Emphatic Human-Robot Interaction .36. Stefania Costantini (Università degli Studi dell'Aquila), Giovanni De Gasperis (Università degli Studi dell'Aquila), and Patrizio Migliarini (Università degli Studi dell'Aquila)
Aspect Detection using Word and Char Embeddings with (Bi) LSTM and CRF .43. Łukasz Augustyniak (Wrocław University of Science and Technology), Tomasz Kajdanowicz (Wrocław University of Science and Technology), and Przemysław Kazienko (Wrocław University of Science and Technology)
BREXIT: A Granger Causality of Twitter Political Polarisation on the FTSE 100 Index and the Pound .5.1 James Usher (Technology University Dublin), Lucía Morales (Technology University Dublin), and Pierpaolo Dondio (Technology University Dublin)
Estimating Business Sentiment from News Texts .55 Kazuhiro Seki (Konan University) and Yusuke Ikuta (Asia Pacific Institute of Research)
Session III: Data, Knowledge and Rules
Session III: Data, Knowledge and Rules On Preserving Information in Schema Transformations: A Constructive Perspective .5.7. Nonyelum Ndefo (Free University of Bozen-Bolzano) and Enrico Franconi (Free University of Bozen-Bolzano)
On Preserving Information in Schema Transformations: A Constructive Perspective .5.7
On Preserving Information in Schema Transformations: A Constructive Perspective .57. Nonyelum Ndefo (Free University of Bozen-Bolzano) and Enrico Franconi (Free University of Bozen-Bolzano) Practical Reformulation of Deductive Databases .65. Michael Genesereth (Stanford University) and Abhijeet Mohapatra
On Preserving Information in Schema Transformations: A Constructive Perspective .5.7. Nonyelum Ndefo (Free University of Bozen-Bolzano) and Enrico Franconi (Free University of Bozen-Bolzano) Practical Reformulation of Deductive Databases .65. Michael Genesereth (Stanford University) and Abhijeet Mohapatra (Stanford University) Simple User Assistance by Data Posting .73. Elio Masciari (ICAR-CNR), Domenico Saccà (ICT-SUD), and Irina

Session IV: System and Applications

Dataset Shift Quantification for Credit Card Fraud Detection .97. Yvan Lucas (LIRIS UMR 5205), Pierre-Edouard Portier (LIRIS UMR 5205), Léa Laporte (LIRIS UMR 5205), Sylvie Calabretto (LIRIS UMR 5205), Liyun He-Guelton (Worldline), Frederic Oblé (Worldline), and Michael Granitzer (Universität Passau)
The Mastro Ecosystem: Ontology-Based Data Management from Theory to Practice .101
Building a Robust Mobile Payment Fraud Detection System with Adversarial Examples .103
ACQUA: Approximate Consistent Query Answering Over Inconsistent Knowledge Bases 107
AskCO: A Multi-language and Extensible Smart Virtual Assistant 1.11. Mattia Atzeni (IBM Research) and Maurizio Atzori (University of Cagliari)
How to Optimize Social Network Influence .1.13. Felix Zhan (USAOT)
Session V: Learning 2
Multiple Cues Association for Multiple Object Tracking Based on Convolutional Neural Network 117
Federated Reinforcement Learning for Fast Personalization .123
Investigating the Added Value of Combining Regression Results from Different Window Lengths .128
Selective Poisoning Attack on Deep Neural Network to Induce Fine-Grained Recognition Error .136
Session VI: Ontologies and Knowledge Graphs
An Ontological Model for Map Data in Automotive Systems .140

n Ontology for Personalization in Serious Games for Assessment .148
Formal Framework for Coupling Document Spanners with Ontologies .155
nowledge Engineering for Competence Assessment on Serious Games Based on Semantic Web .163
ierarchical Rules for Knowledge Representation and Learning .167. Alexander Sakharov (Synstretch)
ession VII: Learning 3
hanced Convolutional Neural Network for Abnormal Event Detection in Video Streams .1.72
dversarial Imitation Learning between Agents with Different Numbers of State Dimensions .1.79
ierarchical Clustering for Discrimination Discovery: A Top-Down Approach .187
Channel Selection Approach Based on Convolutional Neural Network for Multi-channel EEG Motor magery Decoding .195
vestigating the Relationship between Earthquakes and Online News 203. Stephen Camilleri (University of Malta), Joel Azzopardi (University of Malta), and Matthew R. Agius (University of Malta)
mpirical Comparison between Autoencoders and Traditional Dimensionality Reduction Methods .2.11 Quentin Fournier (Polytechnique Montréal) and Daniel Aloise (Polytechnique Montréal)

Session VIII: Classification and Clustering

Predicting Stock Prices using Ensemble Learning and Sentiment Analysis .215 Ujjwal Pasupulety (National Institute of Technology Karnataka), Aiman Abdullah Anees (National Institute of Technology Karnataka), Subham Anmol (National Institute of Technology Karnataka), and Biju R. Mohan (National Institute of Technology Karnataka)
Improve Image Classification Tasks Using Simple Convolutional Architectures with Processed Metadata Injection 223
Detecting Anomalies in Image Classification by Means of Semantic Relationships .231
Natural Language Explanations of Classifier Behavior .239. Rodrigo Monteiro de Aquino (Universidade de São Paulo) and Fabio Cozman (Universidade de São Paulo)
Session IX: Actions and Planning
Multi-agent Strategy for Marine Applications via Temporal Planning 243. Yaniel Carreno (Heriot-Watt University), Ronald P. A. Petrick (Heriot-Watt University), and Yvan Petillot (Heriot-Watt University)
An Activity Recognition Application Based on Markov Decision Process Through Fish Eye Camera 251 Alper Oner (Ata Technology Platforms), Mehmet Selcuk Albayrak (Ata Technology Platforms), Furkan Guner (Ata Technology Platforms), and Idris Murat Atakli (Ata Technology Platforms)
Hierarchical Modeling for Strategy-Based Multi-agent Multi-team Systems .259. D. Michael Franklin (Kennesaw State University)
Aerial Path Planning for Multi-Vehicles .267
Doctoral Consortium
Friend or Foe: Studying user Trustworthiness for Friend Recommendation in the Era of Misinformation .2.73 Antonela Tommasel (ISISTAN, CONICET-UNICEN)
Stagnant Zone Segmentation with U-Net 277. Selam Waktola (Lodz university of technology, poland), Krzestof Grudzien (Lodz university of technology, poland), and Laurent Babout (Lodz university of technology, poland)
A Hybrid Approach for Artwork Recommendation 281. <i>Ignacio Gatti (ISISTAN (CONICET-UNCPBA))</i>

Decision Making from Multiple Crowd Opinions .285
Realistic Data Synthesis Using Enhanced Generative Adversarial Networks 289. Mrinal Kanti Baowaly (Institute of Information Science, Academia Sinica and National Chengchi University), Chao-Lin Liu (National Chengchi University), and Kuan-Ta Chen (Institute of Information Science, Academia Sinica)
How Deep Learning performs with Singularly Perturbed Problems? 293. Sangeeta Yadav (Indian Institute of Science) and Prof. Sashikumaar Ganesan (Indian Institute of Science)
Coral Framework - A Big Social Data Approach to Boost Startup Ecosystem 298. Rafael Escalfoni (Federal University of Rio de Janeiro), Monica Silva (Federal University of Rio de Janeiro), and Jonice Oliveira (Federal University of Rio de Janeiro)
Bayesian Optimization for Accelerating Hyper-Parameter Tuning .302
International Workshop on Technology Enhanced Learning and Assessment (TELA) Assessment of Graduate Students' Resumes Using Short Text Searching Method .306
International Workshop on AI Bigdata Cloud Technologies (ABC)
Detecting Malicious Android Apps using the Popularity and Relations of APIs 309. Jaemin Jung (Dankook Univeristy, South Korea), Kyeonghwan Lim (Dankook Univeristy, South Korea), Byoungchul Kim (Dankook Univeristy, South Korea), Seong-je Cho (Dankook Univeristy, South Korea), Sangchul Han (Konkuk University, South Korea), and Kyoungwon Suh (Illinois State University, USA)
Towards a Knowledge Base of Financial Relations: Overview and Project Description .3.13
Movie Recommendation based on User Similarity of Consumption Pattern Change 3.17. Minjae Kim (Dankook University, South Korea), SungHwan Jeon (Dankook University, South Korea), Heeseong Shin (Dankook University, South Korea), Wonseok Choi (Dankook University, South Korea), Haejin Chung (Dankook University, South Korea), and Yunmook Nah (Dankook University, South Korea) University, South Korea)
Author Index 321.