

31st Innovative Applications of Artificial Intelligence Conference (IAAI'19)

Honolulu, Hawaii, USA
28 – 30 January 2019

ISBN: 978-1-7138-5594-1

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2019) by Association for the Advancement of Artificial Intelligence
All rights reserved.

Printed with permission by Curran Associates, Inc. (2022)

For permission requests, please contact Association for the Advancement of Artificial Intelligence
at the address below.

Association for the Advancement of Artificial Intelligence
2275 East Bayshore Road
Suite 160
Palo Alto, California 94303
USA

Phone: 1-650-328-3123

Fax: 1-650-321-4457

<https://aaai.org/Press/press.php>

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
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

IAAI TECHNICAL PAPERS: DEPLOYED PAPERS

A Genetic Algorithm for Finding a Small and Diverse Set of Recent News Stories on a Given Subject: How We Generate AAAI's AI-Alert.....	9357
<i>Joshua Eckroth, Eric Schoen</i>	
Large Scale Personalized Categorization of Financial Transactions	9365
<i>Christopher Lesner, Alexander Ran, Marko Rukonic, Wei Wang</i>	
Transforming Underwriting in the Life Insurance Industry	9373
<i>Marc Maier, Hayley Carlotto, Freddie Sanchez, Sherriff Balogun, Sears Merritt</i>	
Automated Dispatch of Helpdesk Email Tickets: Pushing the Limits with AI	9381
<i>Atri Mandal, Nikhil Malhotra, Shivali Agarwal, Anupama Ray, Giriprasad Sridhara</i>	
Grading Uncompilable Programs	9389
<i>Rohit Takhar, Varun Aggarwal</i>	

IAAI TECHNICAL PAPERS: EMERGING PAPERS

Remote Management of Boundary Protection Devices with Information Restrictions.....	9398
<i>Aaron Adler, Peter Samouelian, Michael Atighetchi, Yat Fu</i>	
Linking Educational Resources on Data Science	9404
<i>José Luis Ambite, Jonathan Gordon, Lily Fierro, Gully Burns, Joel Mathew</i>	
Early-Stopping of Scattering Pattern Observation with Bayesian Modeling.....	9410
<i>Akinori Asahara, Hidekazu Morita, Chiharu Mitsumata, Kanta Ono, Masao Yano, Tetsuya Shoji</i>	
Querying NoSQL with Deep Learning to Answer Natural Language Questions	9416
<i>Sebastian Blank, Florian Wilhelm, Hans-Peter Zorn, Achim Rettinger</i>	
Probabilistic-Logic Bots for Efficient Evaluation of Business Rules Using Conversational Interfaces	9422
<i>Joseph Bockhorst, Devin Conathan, Glenn M Fung</i>	
Anomaly Detection Using Autoencoders in High Performance Computing Systems.....	9428
<i>Andrea Borghesi, Andrea Bartolini, Michele Lombardi, Michela Milano, Luca Benini</i>	
A Fast Machine Learning Workflow for Rapid Phenotype Prediction from Whole Shotgun Metagenomes.....	9434
<i>Anna Paola Carrieri, Will PM Rowe, Martyn Winn, Edward O. Pyzer-Knapp</i>	
Expert Guided Rule Based Prioritization of Scientifically Relevant Images for Downlinking Over Limited Bandwidth from Planetary Orbiters	9440
<i>Srija Chakraborty, Subhasish Das, Ayan Banerjee, Sandeep K. S. Gupta, Philip R. Christensen</i>	
DeBGUer: A Tool for Bug Prediction and Diagnosis	9446
<i>Amir Elmishali, Roni Stern, Meir Kalech</i>	

Satellite Detection of Moving Vessels in Marine Environments.....	9452
<i>Natalie Fridman, Doron Amir, Yinon Douchan, Noa Agmon</i>	
Automatic Generation of Chinese Short Product Titles for Mobile Display	9460
<i>Yu Gong, Xusheng Luo, Kenny Q. Zhu, Wenwu Ou, Zhao Li, Lu Duan</i>	
Logistic Regression on Homomorphic Encrypted Data at Scale.....	9466
<i>Kyoohyung Han, Seungwan Hong, Jung Hee Cheon, Daejun Park</i>	
A Machine Learning Suite for Machine Components' Health-Monitoring.....	9472
<i>Ramin Hasani, Guodong Wang, Radu Grosu</i>	
Leveraging Textual Specifications for Grammar-Based Fuzzing of Network Protocols	9478
<i>Samuel Jero, Maria Leonor Pacheco, Dan Goldwasser, Cristina Nita-Rotaru</i>	
Novelty Detection for Multispectral Images with Application to Planetary Exploration.....	9484
<i>Hannah R Kerner, Danika F Wellington, Kiri L Wagstaff, James F Bell, Chiman Kwan, Heni Ben Amor</i>	
Robust Multi-Object Detection Based on Data Augmentation with Realistic Image Synthesis for Point-Of-Sale Automation.....	9492
<i>Saiprasad Koturwar, Soma Shiraishi, Kota Iwamoto</i>	
VPDS: An AI-Based Automated Vehicle Occupancy and Violation Detection System.....	9498
<i>Abhinav Kumar, Aishwarya Gupta, Bishal Santra, KS Lalitha, Manasa Kolla, Mayank Gupta, Rishabh Singh</i>	
Profiles, Proxies, and Assumptions: Decentralized, Communications-Resilient Planning, Allocation, and Scheduling	9504
<i>Ugur Kuter, Brian Kettler, Katherine Guo, Martin Hofmann, Valerie Champagne, Kurt Lachevet, Jennifer Lautenschlager, Robert P. Goldman, Luis Asencios, Josh Hamell</i>	
Feature Isolation for Hypothesis Testing in Retinal Imaging: An Ischemic Stroke Prediction Case Study.....	9510
<i>Gilbert Lim, Zhan Wei Lim, Dejiang Xu, Daniel S.W. Ting, Tien Yin Wong, Mong Li Lee, Wynne Hsu</i>	
Building Trust in Deep Learning System Towards Automated Disease Detection.....	9516
<i>Zhan Wei Lim, Mong Li Lee, Wynne Hsu, Tien Yin Wong</i>	
Ensemble Machine Learning for Estimating Fetal Weight at Varying Gestational Age	9522
<i>Yu Lu, Xi Zhang, Xianghua Fu, Fangxiong Chen, Kelvin K. L. Wong</i>	
Bootstrapping Conversational Agents with Weak Supervision.....	9528
<i>Neil Mallinar, Abhishek Shah, Rajendra Ugrani, Ayush Gupta, Manikandan Gurusankar, Tin Kam Ho, Q. Vera Liao, Yunfeng Zhang, Rachel K.E. Bellamy, Robert Yates, Chris Desmarais, Blake McGregor</i>	
Context-Tree Recommendation Vs Matrix-Factorization: Algorithm Selection and Live Users Evaluation.....	9534
<i>Stéphane Martin, Boi Faltings, Vincent Schickel</i>	
Amsterdam to Dublin Eventually Delayed? LSTM and Transfer Learning for Predicting Delays of Low Cost Airlines	9541
<i>Nicholas McCarthy, Mohammad Karzand, Freddy Lecue</i>	

Tagging Address Queries in Maps Search.....	9547
<i>Shekoofeh Mokhtari, Ahmad Mahmoody, Dragomir Yankov, Ning Xie</i>	
Identifying Semantics in Clinical Reports Using Neural Machine Translation.....	9552
<i>Srikanth Mujjiga, Vamsi Krishna, Kalyan Chakravarthi, Vijayananda J</i>	
Artificial Counselor System for Stock Investment.....	9558
<i>Hadi NekoeiQachkanloo, Benyamin Ghogh, Ali Saheb Pasand, Mark Crowley</i>	
Separating Wheat from Chaff: Joining Biomedical Knowledge and Patient Data for Repurposing Medications	9565
<i>Galia Nordon, Gideon Koren, Varda Shalev, Eric Horvitz, Kira Radinsky</i>	
Discovering Temporal Patterns from Insurance Interaction Data	9573
<i>Maleeha Qazi, Srinivas Tunuguntla, Peng Lee, Teja Kanchinadam, Glenn Fung, Neeraj Arora</i>	
Enhancing Evolutionary Conversion Rate Optimization Via Multi-Armed Bandit Algorithms	9581
<i>Xin Qiu, Risto Miikkulainen</i>	
Inferring Concept Prerequisite Relations from Online Educational Resources.....	9589
<i>Sudeshna Roy, Meghana Madhyastha, Sheril Lawrence, Vaibhav Rajan</i>	
Forecasting Intra-Hour Imbalances in Electric Power Systems.....	9595
<i>Tárik S. Salem, Karan Kathuria, Heri Ramampiaro, Helge Langseth</i>	
Cleaning Noisy and Heterogeneous Metadata for Record Linking Across Scholarly Big Datasets.....	9601
<i>Athar Sefid, Jian Wu, Allen C. Ge, Jing Zhao, Lu Liu, Cornelia Caragea, Prasenjit Mitra, C. Lee Giles</i>	
DEFISI: Deep Learning Based Epidemic Forecasting with Synthetic Information.....	9607
<i>Lijing Wang, Jiangzhuo Chen, Madhav Marathe</i>	
Early Detection of Vacant Parking Spaces Using Dashcam Videos	9613
<i>Ming-Che Wu, Mei-Chen Yeh</i>	
ERevisE: Using Natural Language Processing to Provide Formative Feedback on Text Evidence Usage in Student Writing	9619
<i>H. Zhang, A. Magooda, D. Litman, R. Correnti, E. Wang, L.C. Matsumura, E. Howe, R. Quintana</i>	

Author Index