

2018 IEEE International Conference on Big Data, Cloud Computing, Data Science & Engineering (BCD 2018)

**Yonago, Japan
10 – 12 July 2018**



**IEEE Catalog Number: CFP18P32-POD
ISBN: 978-1-5386-5606-8**

**Copyright © 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: | CFP18P32-POD |
| ISBN (Print-On-Demand): | 978-1-5386-5606-8 |
| ISBN (Online): | 978-1-5386-5605-1 |

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

CURRAN ASSOCIATES INC.
proceedings
.com

2018 IEEE/ACIS 3rd International Conference on Big Data, Cloud Computing, Data Science & Engineering **BCD 2018**

Table of Contents

| | |
|---|--|
| Message from Conference Chair .vii..... | |
| Message from Program Chair .viii..... | |
| Conference Organization .ix..... | |
| Program Committee .x..... | |

BCD 2018

| | |
|---|--|
| Cancer Gene Analysis of Microarray Data .1..... | |
| <i>Shuichi Shinmura (Seikei University)</i> | |
| Fault-Prone Source File Analysis Focusing on the Contribution Entropy in Open Source Development .7..... | |
| <i>Kazuki Yamauchi (Ehime University), Hirohisa Aman (Ehime University), Sousuke Amasaki (Okayama Prefectural University), Tomoyuki Yokogawa (Okayama Prefectural University), and Minoru Kawahara (Ehime University)</i> | |
| Community Information's Effects on User Emotions and Behaviors .15..... | |
| <i>Chen Yulin (Tamkang University)</i> | |
| Parallelizing the Construction of a k-Dimensional Tree .23..... | |
| <i>Hiroki Yamasaki (Kyoto Institute of Technology), Atsushi Nunome (Kyoto Institute of Technology), and Hiroaki Hirata (Kyoto Institute of Technology)</i> | |
| A Study of Practical Education Program on AI, Big Data, and Cloud Computing through Development of Automatic Ordering System .31..... | |
| <i>Sachio Saiki (Kobe University), Naoki Fukuyasu (Wakayama University), Kohei Ichikawa (Nara Institute of Science and Technology), Tetsuya Kanda (Osaka University), Masahide Nakamura (Kobe University), Shinsuke Matsumoto (Osaka University), Shinichi Yoshida (Kochi University of Technology), and Shinji Kusumoto (Osaka University)</i> | |
| Tool Breakage Detection using Deep Learning .37..... | |
| <i>Guang Li (University of Electronic Science and Technology of China), Xin Yang (Union Big Data), Duanbing Chen (University of Electronic Science and Technology of China), Anxing Song (Union Big Data), Yuke Fang (Union Big Data), and Junlin Zhou (University of Electronic Science and Technology of China)</i> | |

| | |
|--|------------|
| Predictability Classification for Software Effort Estimation | 43 |
| <i>Naoki Kinoshita (Okayama University), Akito Monden (Okayama University), Masateru Tshunoda (Kindai University), and Zeynep Yücel (Okayama University)</i> | |
| Characteristics of Unmaintainable Source Code in Software Development by Multiple Organizations | 49 |
| <i>Ryo Ishizuka (Waseda University), Naohiko Tsuda (Waseda University), Hironori Washizaki (Waseda University), Yoshiaki Fukazawa (Waseda University), Shunsuke Sugimura (Komatsu Ltd.), and Yuichiro Yasuda (Komatsu Ltd.)</i> | |
| Understanding Popularity Growth of Packages in JavaScript Package Ecosystem | 55 |
| <i>Shi Qiu (Osaka University), Raula Gaikovina Kula (Nara Institute of Science and Technology), and Katsuro Inoue (Osaka University)</i> | |
| On-Line Approximation Mining for Frequent Closed Itemsets Greater than or Equal to Size K | 61 |
| <i>Takumi Nishina (University of Yamanashi), Koji Iwanuma (University of Yamanashi), and Yoshitaka Yamamoto (University of Yamanashi)</i> | |
| TOP: An Efficient Two-Levels of Positive Resampling Framework for Class Imbalanced Data | 67 |
| <i>Nathaniel Netirungroj (Dhurakij Pundit University) and Eakasit Pacharawongsakda (Dhurakij Pundit University)</i> | |
| Thai Defamatory Text Classification on Social Media | 73 |
| <i>Ratchakrit Arreerard (Chulalongkorn University) and Twittie Senivongse (Chulalongkorn University)</i> | |
| Extended Association Rule Mining with Correlation Functions | 79 |
| <i>Hidekazu Saito (Okayama University), Akito Monden (Okayama University), and Zeynep Yücel (Okayama University)</i> | |
| Identifying Spoofing Accounts on Twitter Based on Relationships of Accounts | 85 |
| <i>Keitaro Nakasai (Nara Institute of Science and Technology), Masateru Tsunoda (Kindai University), Hideaki Hata (Nara Institute of Science and Technology), and Kenichi Matsumoto (Nara Institute of Science and Technology)</i> | |
| Deep Learning Based Sentiment Classification in Social Network Services Datasets | 91 |
| <i>Zar Zar Wint (Kumamoto University), Yuki Manabe (Kumamoto University), and Masayoshi Aritsugi (Kumamoto University)</i> | |
| Energy Informatics Applicability; Machine Learning and Deep Learning | 97 |
| <i>Cristina Heghedus (University of Stavanger), Antorweep Chakravorty (University of Stavanger), and Chunming Rong (University of Stavanger)</i> | |
| Analyzing Software Maintenance Cost Based on Work Efficiency and Unit Cost | 102 |
| <i>Masateru Tsunoda (Kindai University), Kenichi Matsumoto (Nara Institute of Science and Technology), Sawako Ohiwa (Economic Research Association), and Tomoki Oshino (Economic Research Association)</i> | |
| Do Review Feedbacks Influence to a Contributor's Time Spent on OSS Projects? | 109 |
| <i>Takuto Norikane (Nara Institute of Science and Technology), Akinori Ihara (Wakayama University), and Kenichi Matsumoto (Nara Institute of Science and Technology)</i> | |
| Author Index | 115 |