Lecture Notes in Computer Science

11204

Commenced Publication in 1973
Founding and Former Series Editors:
Gerhard Goos, Juris Hartmanis, and Jan van Leeuwen

Editorial Board

David Hutchison

Lancaster University, Lancaster, UK

Takeo Kanade

Carnegie Mellon University, Pittsburgh, PA, USA

Josef Kittler

University of Surrey, Guildford, UK

Jon M. Kleinberg

Cornell University, Ithaca, NY, USA

Friedemann Mattern

ETH Zurich, Zurich, Switzerland

John C. Mitchell

Stanford University, Stanford, CA, USA

Moni Naor

Weizmann Institute of Science, Rehovot, Israel

C. Pandu Rangan

Indian Institute of Technology Madras, Chennai, India

Bernhard Steffen

TU Dortmund University, Dortmund, Germany

Demetri Terzopoulos

University of California, Los Angeles, CA, USA

Doug Tygar

University of California, Berkeley, CA, USA

More information about this series at http://www.springer.com/series/7407

Shijian Li (Ed.)

Green, Pervasive, and Cloud Computing

13th International Conference, GPC 2018 Hangzhou, China, May 11–13, 2018 Revised Selected Papers



Editor Shijian Li Zhejiang University Hangzhou, China

ISSN 0302-9743 ISSN 1611-3349 (electronic) Lecture Notes in Computer Science ISBN 978-3-030-15092-1 ISBN 978-3-030-15093-8 (eBook) https://doi.org/10.1007/978-3-030-15093-8

Library of Congress Control Number: 2019934095

LNCS Sublibrary: SL1 - Theoretical Computer Science and General Issues

© Springer Nature Switzerland AG 2019

This work is subject to copyright. All rights are reserved by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publisher, the authors and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, expressed or implied, with respect to the material contained herein or for any errors or omissions that may have been made. The publisher remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

This Springer imprint is published by the registered company Springer Nature Switzerland AG The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

Preface

On behalf of the Organizing Committee, it is our pleasure to welcome you to the proceedings of the 13th International Conference on Green, Pervasive, and Cloud Computing (GPC 2018), held in Hang'zhou, China, during May 11–13, 2018. The conference was organized by Zhejiang University City College, China. GPC aims at bringing together international researchers and practitioners from both academia and industry who are working in the areas of green computing, pervasive computing, and cloud computing. GPC 2018 was the next event in a series of highly successful events focusing on pervasive and environmentally sustainable computing. In the past 10 years, the GPC conference has been successfully held and organized all over the world: Taichung, Taiwan (2006), Paris, France (2007), Kunming, China (2008), Geneva, Switzerland (2009), Hualien, Taiwan (2010), Oulu, Finland (2011), Hong Kong (2012), Seoul, Korea (2013), Wuhan, China (2014), Plantation Island, Fiji (2015), Xian, China (2016), and Cetara, Italy (2017).

This year the value, breadth, and depth of the GPC conference continued to strengthen and grow in importance for both the academic and industrial communities. The strength was evidenced this year by having a number of high-quality submissions resulting in a highly selective program. GPC 2018 received 101 submissions on various aspects including green computing, cloud computing, pervasive sensing, data and knowledge mining, and network security. All submissions received at least three reviews via a high-quality review process involving 48 Program Committee members and a number of additional reviewers. The review and discussion were held electronically using EasyChair. On the basis of the review results, 35 papers were selected for presentation at the conference, giving an acceptance rate lower than 35%. In addition, the conference also featured seven invited talks given by Sajal K. Das, Hai Jin, Jiannong Cao, Minyi Guo, Daqing Zhang, Yong Lian, and Jukka Riekki. We sincerely thank all the chairs, Steering Committee members, and Program Committee members. Without their hard work, the success of GPC 2018 would not have been possible. Last but certainly not least, our thanks go to all authors who submitted papers and to all the attendees. We hope you enjoy the conference proceedings!

May 2018 Ling Chen
Qing Lv

Shijian Li

Organization

General Chairs

Anind Dey Carnegie Mellon University, USA

Gang Pan Zhejiang University, China

Marco Conti National Research Council of Italy (CNR), Pisa, Italy

Technical Program Chairs

Ling Chen Zhejiang University, China

Qin Lv University of Colorado Boulder, USA

Steering Committee

Hai Jin (Chair) Huazhou University of Science and Technology, China

Nabil Abdennadher University of Applied Science and Arts

Western Switzerland, Switzerland

Christophe Cerin University of Paris XIII, France

Sajal K. Das Missouri University of Science and Technology, USA

Jean-Luc University of California – Irvine, USA
Kuan-Ching Li Providence University, Taiwan, China
Cho-Li Wang University of Hong Kong, SAR China
Chao-Tung Yang Tunghai University, Taiwan, China
Laurence T. Yang St. Francis Xavier University, Canada

Special Session Committee

Bin Guo Northwestern Polytechnical University, China

Zhiyong Yu Fuzhou University, China

Local Organization Chairs

Hui Yan Zhejiang University City College, China Guanlin Chen Zhejiang University City College, China

Publication Chairs

Shijian Li Zhejiang University, China

Lin Sun Zhejiang University City College, China

Technical Program Committee

Saadatm Alhashmi University of Sharjah, United Arab Emirates Zeyar Aung Masdar Institute of Science and Technology,

United Arab Emirates

Jorge G. Barbosa University of Porto, Portugal Ling Chen Zhejiang University, China Xiaofeng Chen Xidian University, China

Xiaowen Chu Hong Kong Baptist University, SAR China

Raphaël Couturier University of Burgundy – Franche - Comté, France

Changyu Dong
Jean-Philippe Georges
Dan Grigoras
Jinguang Han

Newcastle University, UK
University of Lorraine, France
University College Cork, Ireland
University of Surrey, UK

Fu-Han Hsu National Central University, Taiwan

Kuo-Chan Huang National Taichung University of Education, Taiwan

Dan Johnsson Umeå University, Sweden Erisa Karafili Imperial College London, UK

Helen Karatza Aristotle University of Thessaloniki, Greece Dong Seong Kim University of Canterbury, New Zealand

Ah Lian Kor Leeds Beckett University, UK
Cheng-Chi Lee Fu Jen Catholic University, Taiwan

Chen Liu Clarkson University, USA

Jaime Lloret Polytechnic University of Valencia, Spain
Jiqiang Lu Institute for Infocomm Research, Singapore
Rongxing Lu University of New Brunswick, Canada

Xiapu Luo The Hong Kong Polytechnic University, SAR China

Mingqi Lv Zhejiang University of Technology, China Victor Malyshkin Russian Academy of Sciences, Russia

Daniele Manini University of Turin, Italy
Mario Donato Marino Leeds Beckett University, UK
Fabio Mercorio University of Milano Bicocca, Italy

Alessio Merlo University of Genoa, Italy Alfredo Navarra University of Perugia, Italy

Marek Ogiela AGH University of Science and Technology, Poland

Ronald H. Perrott Oxford e-Research Centre, UK

Dana Petcu West University of Timisoara, Romania
Florin Pop University Politehnica of Bucharest, Romania
Kewei Sha University of Houston—Clear Lake, USA

Roopak Sinha Auckland University of Technology, New Zealand

Fei Song Beijing Jiaotong University, China

Pradip Srimani Clemson University, USA Ruppa Thulasiram University of Manitoba, Canada

Simon Tjoa St. Poelten University of Applied Sciences, Austria

Marcello Trovati Edge Hill University, UK
Ding Wang Peking University, China

Lizhe Wang Chinese Academy of Sciences, China

Wei Wang The University of Texas at San Antonio, USA

Yu Wang Deakin University, Australia

Meng Yu

The University of Texas at San Antonio, USA

Yanmin Zhu Shanghai Jiao Tong University, China

Contents

Network, Security and Privacy-Preserving	
A Complex Attacks Recognition Method in Wireless Intrusion Detection System	3
Guanlin Chen, Ying Wu, Kunlong Zhou, and Yong Zhang	•
Malware Detection Using Logic Signature of Basic Block Sequence Dawei Shi and Qiang Xu	18
Verifiable and Privacy-Preserving Association Rule Mining in Hybrid	20
Cloud Environment	33
Resource and Attribute Based Access Control Model for System with Huge	
Amounts of Resources	49
Urban Data Acquisition Routing Approach for Vehicular	
Sensor Networks. Leilei Meng, Ziyu Dong, Ziyu Wang, Zhen Cheng, and Xin Su	64
Pervasive Sensing and Analysis	
Searching the Internet of Things Using Coding Enabled	
Index Technology	79
Fuel Consumption Estimation of Potential Driving Paths by Leveraging	
Online Route APIs	92
Large-Scale Semantic Data Management For Urban	
Computing Applications	107
Parking Availability Prediction with Long Short Term Memory Model Wei Shao, Yu Zhang, Bin Guo, Kai Qin, Jeffrey Chan, and Flora D. Salim	124

Time-Based Quality-Aware Incentive Mechanism for Mobile Crowd Sensing	138
Cloud Computing, Mobile Computing and Crowd Sensing	
Container-Based Customization Approach for Mobile Environments on Clouds	155
A Dynamic Resource Pricing Scheme for a Crowd-Funding Cloud Environment	170
Multi-choice Virtual Machine Allocation with Time Windows in Cloud Computing	182
Fine-Gained Location Recommendation Based on User Textual Reviews in LBSNs. Yuanyi Chen, Zengwei Zheng, Lin Sun, Dan Chen, and Minyi Guo	196
Social and Urban Computing	
Estimating Origin-Destination Flows Using Radio Frequency Identification Data	215
A Multi-task Decomposition and Reorganization Scheme for Collective Computing Using Extended Task-Tree	226
CompetitiveBike: Competitive Prediction of Bike-Sharing Apps Using Heterogeneous Crowdsourced Data	241
Dual World Network Model Based Social Information Competitive Dissemination	256
Parallel and Distribution Systems, Optimization	
WarmCache: A Comprehensive Distributed Storage System Combining Replication, Erasure Codes and Buffer Cache Brian A. Ignacio, Chentao Wu, and Jie Li	269

	Contents	xiii
imBBO: An Improved Biogeography-Based Optimization Algorith Kai Shi, Huiqun Yu, Guisheng Fan, Xingguang Yang, and Zhe		284
An Efficient Consensus Protocol for Real-Time Permissioned Bloc Under Non-Byzantine Conditions		298
EDF-Based Mixed-Criticality Systems with Weakly-Hard Timing Constraints		312
GA-Based Mapping and Scheduling of HSDF Graphs on Multiprocessor Platforms		323
Integration and Evaluation of a Contract-Based Flexible Real-Tim Scheduling Framework in AUTOSAR OS		334
Pervasive Application		
A Low-Cost Service Node Selection Method in Crowdsensing Based on Region-Characteristics		345
Electric Load Forecasting Based on Sparse Representation Model Fangwan Huang, Xiangping Zheng, Zhiyong Yu, Guanyi Yang, and Wenzhong Guo		357
Sensing Urban Structures and Crowd Dynamics with Mobility Big Yan Liu, Longbiao Chen, Linjin Liu, Xiaoliang Fan, Sheng Wa Cheng Wang, and Jonathan Li		370
A Multiple Factor Bike Usage Prediction Model in Bike-Sharing Zengwei Zheng, Yanzhen Zhou, and Lin Sun	System	390
Data Mining and Knowledge Mining		
Talents Recommendation with Multi-Aspect Preference Learning Fei Yi, Zhiwen Yu, Huang Xu, and Bin Guo		409
A Temporal Learning Framework: From Experience of Artificial Cultivation to Knowledge		424
Lin Sun, Zengwei Zheng, Jianzhong Wu, and JianFeng Zhu		

A Recency Effect Hidden Markov Model for Repeat Consumption	
Behavior Prediction	440
Forecast of Port Container Throughput Based on TEI@I Methodology Qingfei Liu, Laisheng Xiang, and Xiyu Liu	451
Posters	
Named Entity Recognition Based on BiRHN and CRF	465
Quadratic Permutation Polynomials-Based Sliding Window Network Coding in MANETs	474
Chao Gui, Baolin Sun, Xiong Liu, Ruifan Zhang, and Chengli Huang	7/1
Image Retrieval Using Inception Structure with Hash Layer for Intelligent	400
Monitoring Platform	482
Retail Consumer Traffic Multiple Factors Analysis and Forecasting Model	400
Based on Sparse Regression	489
Consulting and Forecasting Model of Tourist Dispute Based on LSTM	
Neural Network	495
Research and Design of Cloud Storage Platform for Field Observation	501
Data in Alpine Area	501
A Novel PSO Algorithm for Traveling Salesman Problem	
Based on Dynamic Membrane System	506
Breaking Though the Limitation of Test Components Using	
in Authentication Test	516
Author Index	525