

Contents

Applications

Similarity Computation Exploiting the Semantic and Syntactic Inherent Structure Among Job Titles	3
<i>Sarthak Ahuja, Joydeep Mondal, Sudhanshu Shekhar Singh, and David Glenn George</i>	
RISE: Resolution of Identity Through Similarity Establishment on Unstructured Job Descriptions	19
<i>Rakesh Ramesh Rao Pimplikar, Kalapriya Kannan, Abhik Mondal, Joydeep Mondal, Sushant Saxena, Gyana Parija, and Chandra Devulapalli</i>	
Social-Sensor Cloud Service for Scene Reconstruction.	37
<i>Tooba Aamir, Athman Bouguettaya, Hai Dong, Sajib Mistry, and Abdelkarim Erradi</i>	
Quark: A Methodology to Transform People-Driven Processes to Chatbot Services	53
<i>Anup K. Kalia, Pankaj R. Telang, Jin Xiao, and Maja Vukovic</i>	

Foundations

Cloud Certification Process Validation Using Formal Methods	65
<i>Maria Krotsiani, Christos Kloukinas, and George Spanoudakis</i>	
Validation of Service Blueprint Models by Means of Formal Simulation Techniques.	80
<i>Montserrat Estañol, Esperanza Marcos, Xavier Oriol, Francisco J. Pérez, Ernest Teniente, and Juan M. Vara</i>	
Deadlock-Freeness Verification of Business Process Configuration Using SOG	96
<i>Souha Boubaker, Kais Klai, Katia Schmitz, Mohamed Graiet, and Walid Gaaloul</i>	
Formally Modeling, Executing, and Testing Service-Oriented Systems with UML and OCL	113
<i>Loli Burgueño and Martin Gogolla</i>	

Mining and Analytics

App Update Patterns: How Developers Act on User Reviews in Mobile App Stores	125
<i>Shance Wang, Zhongjie Wang, Xiaofei Xu, and Quan Z. Sheng</i>	
Predicting the Evolution of Service Value Features from User Reviews for Continuous Service Improvement.	142
<i>Xu Chi, Haifang Wang, Zhongjie Wang, Shiping Chen, and Xiaofei Xu</i>	
Confidence-Aware Reputation Bootstrapping in Composite Service Environments	158
<i>Lie Qu, Athman Bouguettaya, and Azadeh Ghari Neiat</i>	
Compound Trace Clustering to Generate Accurate and Simple Sub-Process Models	175
<i>Yaguang Sun, Bernhard Bauer, and Matthias Weidlich</i>	
An Approach to Modeling and Discovering Event Correlation for Service Collaboration	191
<i>Meiling Zhu, Chen Liu, Jianwu Wang, Shen Su, and Yanbo Han</i>	
Energy Efficient Scheduling of Application Components via Brownout and Approximate Markov Decision Process	206
<i>Minxian Xu and Rajkumar Buyya</i>	
Predicting the Available Bandwidth on Intra Cloud Network Links for Deadline Constrained Workflow Scheduling in Public Clouds	221
<i>Rachael Shaw, Enda Howley, and Enda Barrett</i>	
Inferring Calling Relationship Based on External Observation for Microservice Architecture	229
<i>Shinya Kitajima and Naoki Matsuoka</i>	

Quality of Service

A QoS-Aware Resource Allocation Controller for Function as a Service (FaaS) Platform.	241
<i>MohammadReza HoseinyFarahabady, Young Choon Lee, Albert Y. Zomaya, and Zahir Tari</i>	
Probabilistic Qualitative Preference Matching in Long-Term IaaS Composition	256
<i>Sajib Mistry, Athman Bouguettaya, Hai Dong, and Abdelkarim Erradi</i>	

An Embedding Based Factorization Machine Approach for Web Service QoS Prediction	272
<i>Yaoming Wu, Fenfang Xie, Liang Chen, Chuan Chen, and Zibin Zheng</i>	

A Deep Learning Approach for Long Term QoS-Compliant Service Composition	287
<i>Hamza Labbaci, Brahim Medjahed, and Youcef Aklouf</i>	

Run-time Service Operation and Management

An Artifact-Driven Approach to Monitor Business Processes Through Real-World Objects	297
<i>Giovanni Meroni, Claudio Di Ciccio, and Jan Mendling</i>	

BenchFoundry: A Benchmarking Framework for Cloud Storage Services	314
<i>David Bernbach, Jörn Kuhlenkamp, Akon Dey, Arunmozhi Ramachandran, Alan Fekete, and Stefan Tai</i>	

Automated Analysis of Cloud Offerings for Optimal Service Provisioning . . .	331
<i>José María García, Octavio Martín-Díaz, Pablo Fernandez, Antonio Ruiz-Cortés, and Miguel Toro</i>	

Middleware for Dynamic Upgrade Activation and Compensations in Multi-tenant SaaS	340
<i>Dimitri Van Landuyt, Fatih Gey, Eddy Truyen, and Wouter Joosen</i>	

Service Adaptation

Risk-Based Proactive Process Adaptation	351
<i>Andreas Metzger and Philipp Bohn</i>	

A Debt-Aware Learning Approach for Resource Adaptations in Cloud Elasticity Management	367
<i>Carlos Mera-Gómez, Francisco Ramírez, Rami Bahsoon, and Rajkumar Buyya</i>	

Large-Scale and Adaptive Service Composition Using Deep Reinforcement Learning	383
<i>Hongbing Wang, Mingzhu Gu, Qi Yu, Huanhuan Fei, Jiajie Li, and Yong Tao</i>	

Service Engineering

ECHO: An Adaptive Orchestration Platform for Hybrid Dataflows across Cloud and Edge	395
<i>Pushkara Ravindra, Aakash Khochare, Siva Prakash Reddy, Sarthak Sharma, Prateeksha Varshney, and Yogesh Simmhan</i>	

Ensuring and Assessing Architecture Conformance to Microservice Decomposition Patterns	411
<i>Uwe Zdun, Elena Navarro, and Frank Leymann</i>	
Polly: A Language-Based Approach for Custom Change Detection of Web Service Data	430
<i>Elyas Ben Hadj Yahia, Jean-Rémy Falleri, and Laurent Réveillère</i>	
Design and Evaluation of a Self-Service Delivery Framework.	445
<i>Constantin Adam, Nikos Anerousis, Muhammed Fatih Bulut, Robert Filepp, Anup Kalia, Brian Peterson, John Rofrano, Maja Vukovic, and Jin Xiao</i>	
Automated Generation of REST API Specification from Plain HTML Documentation.	453
<i>Hanyang Cao, Jean-Rémy Falleri, and Xavier Blanc</i>	
Efficient Keyword Search for Building Service-Based Systems Based on Dynamic Programming	462
<i>Qiang He, Rui Zhou, Xuyun Zhang, Yanchun Wang, Dayong Ye, Feifei Chen, Shiping Chen, John Grundy, and Yun Yang</i>	
Supporting the Decision of Migrating to Microservices Through Multi-layer Fuzzy Cognitive Maps	471
<i>Andreas Christoforou, Martin Garriga, Andreas S. Andreou, and Luciano Baresi</i>	
A Tree-Based Reliability Analysis for Fault-Tolerant Web Services Composition	481
<i>Yanjun Shu, Decheng Zuo, Hongwei Liu, Quan Z. Sheng, Wei Emma Zhang, and Jian Yang</i>	
Modernization of Information Systems at Red.es: An Approach Based on Gap Analysis and ADM	490
<i>Marcos López-Sanz, Valeria de Castro, Esperanza Marcos, and Jorge Moratalla</i>	
Improving Web Services Design Quality Using Dimensionality Reduction Techniques	499
<i>Hanzhang Wang and Marouane Kessentini</i>	
Service Recommendation	
ARA-Assessor: Application-Aware Runtime Risk Assessment for Cloud-Based Business Continuity.	511
<i>Min Fu, Shiping Chen, Jian Yang, Surya Nepal, and Liming Zhu</i>	

Personalized Quality Centric Service Recommendation	528
<i>Yiwen Zhang, Xiaofei Ai, Qiang He, Xuyun Zhang, Wanchun Dou, Feifei Chen, Liang Chen, and Yun Yang</i>	
Cataloger: Catalog Recommendation Service for IT Change Requests	545
<i>Anup K. Kalia, Jin Xiao, Muhammed F. Bulut, Maja Vukovic, and Nikos Anerousis</i>	
ATLAS: A World-Wide Travel Assistant Exploiting Service-Based Adaptive Technologies.	561
<i>Antonio Bucchiarone, Martina De Sanctis, and Annapaola Marconi</i>	

Services in Organizations, Business and Society

A Variability Model for Store-Oriented Software Ecosystems: An Enterprise Perspective	573
<i>Bahar Jazayeri, Olaf Zimmermann, Gregor Engels, and Dennis Kundisch</i>	
An Analysis of RESTful APIs Offerings in the Industry	589
<i>Antonio Gamez-Diaz, Pablo Fernandez, and Antonio Ruiz-Cortes</i>	
Efficient Influential Individuals Discovery on Service-Oriented Social Networks: A Community-Based Approach	605
<i>Fanghua Ye, Jiahao Liu, Chuan Chen, Guohui Ling, Zibin Zheng, and Yuren Zhou</i>	
Empirical Study on REST APIs Usage in Android Mobile Applications.	614
<i>Mohamed A. Oumaziz, Abdelkarim Belkhir, Tristan Vacher, Eric Beaudry, Xavier Blanc, Jean-Rémy Falleri, and Naouel Moha</i>	

Services in the Cloud

Revenue-Driven Service Provisioning for Resource Sharing in Mobile Cloud Computing.	625
<i>Hongyue Wu, Shuiguang Deng, Wei Li, Jianwei Yin, Qiang Yang, Zhaohui Wu, and Albert Y. Zomaya</i>	
Continuous Learning as a Service for Conversational Virtual Agents.	641
<i>Shivali Agarwal, Shubham Atreja, and Gargi Dasgupta</i>	
Costradamus: A Cost-Tracing System for Cloud-Based Software Services . . .	657
<i>Jörn Kühlenkamp and Markus Klems</i>	
An Automatic Approach for Transforming IoT Applications to RESTful Services on the Cloud.	673
<i>Yu Zhao, Ying Zou, Joanna Ng, and Daniel Alencar da Costa</i>	

RobOps: Robust Control for Cloud-Based Services 690
 Cheng Chen, Jordi Arjona Aroca, and Diego Lugones

Serverless Execution of Scientific Workflows 706
 Qingye Jiang, Young Choon Lee, and Albert Y. Zomaya

A Market-Based Approach for Detecting Malware in the Cloud
via Introspection 722
 Nada Alruhaily, Carlos Mera-Gómez, Tom Chothia, and Rami Bahsoon

Trustless Intermediation in Blockchain-Based Decentralized
Service Marketplaces 731
 *Markus Klems, Jacob Eberhardt, Stefan Tai, Steffen Härtlein,
 Simon Buchholz, and Ahmed Tidjani*

Author Index 741

Service-Oriented Computing

15th International Conference, ICSOC 2017, Malaga,
Spain, November 13-16, 2017, Proceedings

Maximilien, M.; Vallecillo, A.; Wang, J.; Oriol, M. (Eds.)

2017, XXVI, 743 p. 235 illus., Softcover

ISBN: 978-3-319-69034-6