RESEARCH TRACKS

Research Track 1: Services Systems

SATE--Service Boundary and Abstraction Threshold Estimation for Efficient Services Design .......................................................................................................................... 1
   Kalapriya Kanan, Gandhi Sivakumar, and Nanjangud C. Narendra

Adaptive Request Prioritization in Dynamic Service-Oriented Systems ....................................................... 9
   Roman Khazankin, Daniel Schall, and Schahram Dustdar

Proactive SLA Negotiation for Service Based Systems: Initial Implementation and Evaluation Experience ......................................................................................................................... 16
   Khaled Mahbub and George Spanoudakis

Research Track 2: Cloud Management

Introducing Semantics to Cloud Services Catalogs .......................................................................................................................... 24
   Yu Deng, Michael R. Head, Andrzej Kochut, Jonathan Munson, Anca Sailer, and Hidayatullah Shaikh

Dynamic Processor Resource Configuration in Virtualized Environments ....................................................... 32
   Hai Jin, Li Deng, Song Wu, and Xuanhua Shi
Data Augmentation as a Service for Single View Creation.................................................................40
  Ullas Nambiar, Tanveer A. Faruquie, K. Hima Prasad,
  L. Venkata Subramaniam, and Mukesh K. Mohania

Research Track 3: Service Discovery
Recommend-As-You-Go: A Novel Approach Supporting Services-Oriented
Scientific Workflow Reuse ..................................................................................................................48
  Jia Zhang, Wei Tan, John Alexander, Ian Foster, and Ravi Madduri
QoS-Based Service Ranking and Selection for Service-Based Systems .............................................56
  Stephen S. Yau and Yin Yin
Self-Adaptive Fuzzy QoS-Driven Web Service Discovery .................................................................64
  Romina Torres, Hernán Astudillo, and Rodrigo Salas

Research Track 4: Cloud Migration
Improving Performance and Availability of Services Hosted on IaaS Clouds
with Structural Constraint-Aware Virtual Machine Placement ..........................................................72
  Deepal Jayasinghe, Calton Pu, Tamar Eilam, Malgorzata Steinder, Ian Whally,
  and Ed Snible
Migration to Multi-image Cloud Templates .........................................................................................80
  Birgit Pfitzmann and Nikolai Joukov
Management of SOA-Based Context-Aware Applications Hosted in
a Distributed Cloud Subject to Percentile Constraints .........................................................................88
  Keerthana Boloor, Rada Chirkova, Tiia Salo, and Yannis Viniotis

Research Track 5: Service Measurement
Dynamic Fractal Clustering Technique for SOAP Web Messages ......................................................96
  Dhiah Al-Shammary and Ibrahim Khalil
Enhancing Penetration Testing with Attack Signatures and Interface
Monitoring for the Detection of Injection Vulnerabilities in Web Services ....................................104
  Nuno Antunes and Marco Vieira
Provisioning Norm: An Asymmetric Quality Measure for SaaS Resource
Allocation ..............................................................................................................................................112
  M. Brent Reynolds, Kenneth M. Hopkinson, Mark E. Oxley, and Barry E. Mullins
Research Track 6: Workflow Management

Automated Attribute Inference in Complex Service Workflows Based on Sharing Analysis .................................................................................................................................................................................. 120

Dragan Ivanović, Manuel Carro, and Manuel Hermenegildo

Semantic Notions of Weakly Correct AND/XOR Business Workflows Based on Partial Synchronization .................................................................................................................................................................................. 128

Akhil Kumar, Anup K. Sen, Meda H. Sundari, and Amitava Bagchi

OPQL: A First OPM-Level Query Language for Scientific Workflow Provenance .................................................................................................................................................................................. 136

Chunhyeok Lim, Shiyong Lu, Artem Chebotko, and Farshad Fotouhi

Research Track 7: Service Composition

Top-k Web Service Compositions Using Fuzzy Dominance Relationship .................................................................................................................................................................................. 144

Karim Benouaret, Djamal Benslimane, Allel Hadjali, and Mahmoud Barhamgi

Bridging the Gap between Semantic Web Service Composition and Common Implementation Architectures .................................................................................................................................................................................. 152

Fuyuki Ishikawa, Satoshi Katafuchi, Florian Wagner, Yoshiaki Fukazawa, and Shinichi Honiden

Exception Diagnosis for Composite Service Based on Error Propagation Degree .................................................................................................................................................................................. 160

Yu Dai, Lei Yang, Bin Zhang, and Zhiliang Zhu

Research Track 8: Service Quality Modeling

A Game Theoretic Approach for Analyzing the Efficiency of Web Services in Collaborative Networks .................................................................................................................................................................................. 168

Babak Khosravifar, Mahsa Alishahi, Jamal Bentahar, and Philippe Thiran

A Composed Approach for Automatic Classification of Web Services Robustness .................................................................................................................................................................................. 176

Rui Oliveira, Nuno Laranjeiro, and Marco Vieira

Modeling and Analysis of Dependability Attributes of Service Computing Systems .................................................................................................................................................................................. 184

Jiwei Huang, Chuang Lin, Xiangzhen Kong, and Yemei Zhu

Evaluating Feedback Ratings for Measuring Reputation of Web Services .................................................................................................................................................................................. 192

Shangguang Wang, Zibin Zheng, Qibo Sun, Hua Zou, and Fangchun Yang
Research Track 9: Workflow Modeling

Modelling Workflow Executions under Role-Based Authorisation Control .........................................................200

Ligang He, Kewei Duan, Xueguang Chen, Deqing Zou, Zongfen Han,
Ali Fadavinia, and Stephen A. Jarvis

Detecting Concurrency-Related Problematic Activity Arrangement
in WS-BPEL Programs ...........................................................................................................................................209

Yitao Ni, Lu Zhang, Zhongjie Li, Tao Xie, and Hong Mei

Precise Mappings between Business Process Models in Versioning Scenarios ................................................218

Christian Gerth, Markus Luckey, Jochen M. Küster, and Gregor Engels

APPLICATIONS AND EXPERIENCES TRACKS

Applications and Experiences Track 1: Workflow Management

How Physical Objects and Business Workflows Can Be Correlated .................................................................226

Andreas Wombacher

Undoing Event-Driven Adaptation of Business Processes .......................................................................................234

Sébastien Mosser, Gabriel Hermosillo, Anne-Françoise Le Meur,
Lionel Seinturier, and Laurence Duchien

Reference Models for Saas Oriented Business Workflow Management Systems ..................................................242

Bin Wu, Shuiguang Deng, Ying Li, Jian Wu, and Jianwei Yin

Applications and Experiences Track 2: Service Composition and Verification

Comparison of Bio-inspired Algorithms for Peer Selection in Services Composition ........................................250

Jun Shen, Ghassan Beydoun, Shuai Yuan, and Graham Low

A Spring Based Framework for Verification of Service Composition .................................................................258

Anshuman Mukherjee, Zahir Tari, and Peter Bertok

Flexible Ontology-Independent and QOS-Enabled Dynamic Web Services Composition Using Google Distance ..........................................................266

R. Ding and D.N. Jutla
Applications and Experiences Track 3: Service Composition and Analysis
Towards an Automated Gap Analysis for E-Service Portfolios .................................................................274
Norman May, Ulrich Scholten, and Robin Fischer
Adaptive QoS-Aware Service Process Reconfiguration ............................................................................282
Jing Li, Dianfu Ma, Xiupei Mei, Hailong Sun, and Zibin Zheng
Analyzing Fault-Impact Region of Composite Service for Supporting Fault Handling Process ...........................................................................................................290
Azlan Ismail, Jun Yan, and Jun Shen

Applications and Experiences Track 4: Semantic Services
Reconciliation of Ontology Mappings to Support Robust Service Interoperability .................................................................298
Asad Masood Khattak, Zeeshan Pervez, Khalid Latif, A.M. Jehad Sarkar, Sungyoung Lee, and Young-Koo Lee
Correlating Business Objectives with Services: An Ontology-Driven Approach ......................................................306
Lam-Son Lê, Aditya K. Ghose, Muralee Krishnan, Krishnajith M. Krishnankunju, and Konstantin Hoesch-Klohe
Discovering Linkage Patterns among Web Services Using Business Process Knowledge ........................................................................................................314
Mohammed AbuJarour and Ahmed Awad

Applications and Experiences Track 5: Service Selection
Web Service Selection Based on Similarity Evaluation ..................................................................................322
Hao Gao, Jun Yan, and Yi Mu
Reputation-Based Selection of Language Services ..........................................................................................330
Shinsuke Goto, Yohei Murakami, and Toru Ishida
Preference-Based Discovery of Dynamically Generated Service Offers ............................................................338
Maciej Zaremba, Tomas Vitvar, Sami Bhiri, and Manfred Hauswirth

Applications and Experiences Track 6: Services Composition
Controlled Flexibility in Business Processes Defined for Service Compositions .........................................................346
Malinda Kapuruge, Jun Han, and Alan Colman
CBBCM: Clustering Based Automatic Service Composition ........................................................................354
Ying Ma, Liang Chen, Jian Hui, and Jian Wu
QoS-Driven Service Composition with Multiple Flow Structures ....................................................................362
Wen-jun Li, Xi Li, Xiao-jun Liang, and Xiao-cong Zhou
Applications and Experiences Track 7: Service Pricing
Towards Pay-As-You-Consume Cloud Computing .................................................................370
   Shadi Ibrahim, Bingsheng He, and Hai Jin
Price Heuristics for Highly Efficient Profit Optimization of Service Composition ..................378
   Xianzhi Wang, Zhongjie Wang, and Xiaofei Xu
Differentiated Service Pricing on Social Networks Using Stochastic Optimization ......................386
   Alexei A. Gaivoronski and Denis Becker

Applications and Experiences Track 8: Evolutionary Service Composition
Client Update: A Solution for Service Evolution .......................................................................394
   Meriem Ouederni, Gwen Salaün, and Ernesto Pimentel
Cultural Language Service: A Discovery, Composition and Organization .....................................402
   Arif Bramantoro and Toru Ishida
A Granular Concurrency Control for Collaborative Scientific Workflow Composition ..................410
   Xubo Fei, Shiyong Lu, and Jia Zhang

Applications and Experiences Track 9: Service Monitoring and Testing
Magnifier: Online Detection of Performance Problems in Large-Scale Cloud Computing Systems ..................418
   Haibo Mi, Huaimin Wang, Gang Yin, Hua Cai, Qi Zhou, Tingtao Sun, and Yangfan Zhou
Building a Service-Oriented Monitoring Framework with REST and Nagios .................................426
   Gregory Katsaros, Roland Kübert, and Georgina Gallizo
Model-Based Testing of Service-Oriented Applications via State Models ......................................432
   Andre Takeshi Endo and Adenilso Simao

Applications and Experiences Track 10: Service Applications
IRTG: A Grid Middleware for Bioinformatics ........................................................................440
   Kamal Taha and Ramez Elmasri
OdinTools--Model-Driven Development of Intelligent Mobile Services ........................................448
   Andrew Meads and Ian Warren
Applications and Experiences Track 11: Service Quality Control

Fine-Grained Modeling of Web Services for Test-Based Security Certification ........................................456
  Marco Anisetti, Claudio A. Ardagna, and Ernesto Damiani

Optimizing DaaS Web Service Based Data Mashups ..............................................................................464
  Mahmoud Barhamgi, Chirine Ghedira, Djamal Benslimane,
  Salah-Eddine Tbahriti, and Michael Mrissa

A New Approach for Quality Enforcement in Communities of Web Services ........................................472
  Abdelghani Benharref, M. Adel Serhani, Salah Bouktif, and Jamal Bentahar

Applications and Experiences Track 12: Service Models

A Dependency-Aware Hierarchical Service Model for SaaS and Cloud Services ................................................480
  Rui Wang, Yong Zhang, Shijun Liu, Lei Wu, and Xiangxu Meng

A Clustering Based Schema Matching Scheme for Improving Matching Correctness of Web Service Interfaces ........................................................................................................488
  Byoungoh Kim, Ho Namkoong, Dongman Lee, and Soon J. Hyun

Applications and Experiences Track 13: Quality Measurement

A Petri-Net Model for the Publish-Subscribe Paradigm and Its Application for the Verification of the BonjourGrid Middleware ................................................................................................................496
  Leila Abidi, Christophe Cérin, and Sami Evangelista

Measuring the Conceptual Coupling of Services Using Latent Semantic Indexing ........................................504
  Ali Kazemi, Ali Nasirzadeh Azizkandi, Ali Rostampour, Hassan Haghighi,
  Pooyan Jamshidi, and Fereidoon Shams

A Metrics Framework for Evaluating SOA Service Granularity ................................................................512
  Saad Alahmari, Ed Zaluska, and David C. De Roure

Applications and Experiences Track 14: Service Allocation

Jerrymouse: A Tool for a Flexible and Dynamic Distribution of Web Service Requests ........................................520
  Paulo S.L. de Souza, Bruno S. Faiçal, Marcos J. Santana,
  Regina H.C. Santana, Jonathan de Matos, and Ed Zaluska

On-Line Real-Time Service Allocation and Scheduling for Distributed Data Centers ........................................528
  Shuo Liu, Gang Quan, and Shangping Ren
An Enhanced PROMETHEE Model for QoS-Based Web Service Selection ........................................536
Raed Karim, Chen Ding, and Chi-Hung Chi

INDUSTRY TRACKS

Industry Track 1: Enterprise Management
Towards a Service-Oriented Component Model for Autonomic Management ........................................544
Yoann Maurel, Philippe Lalanda, and Ada Diaconescu
Managing Enterprise IT Systems Using Online Communities ....................................................................552
Maja Vukovic and Vijay K. Naik
Managing Software Assets in a Global Enterprise ..................................................................................560
Matthew A. McCarthy and Lorraine M. Herger

Industry Track 2: Services Applications
Intelligent Scheduling Algorithm and Application in Modernizing Manufacturing Services ..........................................................568
Yaojun Chen, Liang-Jie Zhang, and Qian Wang
Application Framework for Efficient Development of Sensor as a Service for Home Network System ..........................................................576
Masahide Nakamura, Shuhei Matsuo, Shinsuke Matsumoto, Hiroyuki Sakamoto, and Hiroshi Igaki

Industry Track 3: Services Development Frameworks
Leveraging Cloud Platform for Custom Application Development ............................................................584
Nianjun Zhou, Da Peng An, Liang-Jie Zhang, and Chih-Hong Wong
Capability Diagnostics of Enterprise Service Architectures Using a Dedicated Software Architecture Reference Model ..................................................................592
Alfred Zimmermann, Helge Buckow, Hans-Jürgen Groß, Oliver F. Nandico, Gunther Piller, and Karl Prott
REFINTO: An Ontology-Based Requirements Engineering Framework for Business-IT Alignment in Financial Services Organizations ..........................................................600
Emem Umoh, Pedro R. Falcone Sampaio, and Babis Theodoulidis

Industry Track 4: Services Selection and Composition
Providing Map and GPS Assistance to Service Composition in Bioinformatics ........................................608
Wei Tan, Jia Zhang, Ravi Madduri, Ian Foster, and David De Roure
Building FCA-Based Decision Trees for the Selection of Heterogeneous Services ....................................................................................................................................................616
Stéphanie Chollet, Vincent Lestideau, Philippe Lalanda, Yoann Maurel, Pierre Colomb, and Olivier Raynaud

Composition Context Matching for Web Service Recommendation ............................................................................................................624
Nguyen Ngoc Chan, Walid Gaaloul, and Samir Tata

ServiceMap: Providing Map and GPS Assistance to Service Composition in Bioinformatics ...............................................................................................................................................632
Wei Tan, Jia Zhang, Ravi Madduri, Ian Foster, David De Roure, and Carole Goble

Industry Track 5: Services Testing
An Event-Driven Approach for Runtime Verification of Inter-organizational Choreographies ....................................................................................................................................................640
Aymen Baouab, Olivier Perrin, and Claude Godart

Verify Enterprise System Implementation through Business Process Model-Based Test Suite Generation ....................................................................................................................................................648
Bing Shao, Qinhua Wang, Changrui Ren, Miao He, and Jin Dong

A Novel Test and Evaluation Scheme for WS-Management Protocol and Its Implementation ....................................................................................................................................................655
ZhiHui Lu, Xiaohong Gao, and Jie Wu

Industry Track 6: Services Monitoring
A Real-Time Risk Assessment and Mitigation Engine Based on Dynamic Context ....................................................................................................................................................663
Sinem Güven and Catalin Mihai Barbu

A Business Centric Monitoring Approach for Heterogeneous Service Composites ....................................................................................................................................................671
Geetika T. Lakshmanan, Paul T. Keyser, Aleksander Slominski, and Francisco Curbera

Sustainable Service Level Agreements ....................................................................................................................................................679
Thiago Barroero, Gianmario Motta, and Marco Durante

Industry Track 7: Business Process Management
Towards a Constraint-Based Framework for Dynamic Business Process Adaptation ....................................................................................................................................................685
Zan Xiao, Donggang Cao, Chao You, and Hong Mei

Uniform Modeling of Resources and Business Processes Using Business Entities ....................................................................................................................................................693
Rong Liu, Anil Nigam, Zhe Shan, and Frederick Wu
LiSEP: A Lightweight and Extensible Tool for Complex Event Processing ........................................701
    Ivan Zappia, David Parlanti, and Federica Paganelli

Industry Track 8: Case Studies
SOMP: Service-Oriented Multi Processors ..........................................................................................709
    Chao Wang, Junneng Zhang, Xuehai Zhou, Xiaojing Feng, and Xiaoning Nie
Sensor Service Selection through Switch Options ............................................................................717
    Sahin Cem Geyik, Boleslaw Szymanski, Petros Zerfos, and Abbe Mowshowitz

WORK-IN-PROGRESS TRACKS

Work-in-Progress Track 1: Services Discovery
QoS-Based Distributed Service Selection in Large-Scale Web Services .........................................725
    Limin Pan, Liang Chen, Jian Hui, and Jian Wu
An Enhanced QoS Prediction Approach for Service Selection .......................................................727
    Liang Chen, Yipeng Feng, Jian Wu, and Zibin Zheng
A Clustering Method for Web Service Discovery ............................................................................729
    Jian-xiao Liu, Ke-qing He, Jian Wang, and Da Ning
Using 3-Way Satisfaction for Web Service Selection: Preliminary Investigation .............................731
    Erbin Lim, Philippe Thiran, Zakaria Maamar, and Jamal Bentahar
Discovering Service Similarity by Testing .......................................................................................733
    Joshua Church and Amihai Motro
A Multi-dimensional Social Tagging Method for Semantic Web Services .......................................735
    Da Ning, Ke-qing He, Rong Peng, and Jian-xiao Liu

Work-in-Progress Track 2: SOA
An Architecture for Managing and Delivering Trustworthy Context-Dependent Services ..................737
    Naseem Ibrahim, Mubarak Mohammed, and Vangalur Alagar
On-Demand Service-Oriented Architecture and Standardization .....................................................739
    Fei He, Keqing He, Peng Liang, and Jian Wang
Cloud Service Delivery across Multiple Cloud Platforms ................................................................741
    Ines Houidi, Marouen Mechtiri, Wajdi Louati, and Djamil Zeghlache
An Ontology Based Service Creation Process .................................................................................743
    Budan Wu and Junliang Chen
MyDeepWeb: An Integration Service for Your OWN Deep Web Data .............................................745
    Sherif Sakr and Anna Liu
Work-in-Progress Track 3: Services Coordination

A Model-Driven BPM Approach for SOA Mediation Information System Design in a Collaborative Context

Wenxin Mu, Frédérick Bénaben, Hervé Pingaud, Nicolas Boissel-Dallier, and Jean-Pierre Lorré

Towards a Flexible Event-Driven SOA Based Approach for Collaborating Interactive Business Processes

Da Zhu, Yang Zhang, Bo Cheng, and Junliang Chen

Integration of Business and Manufacturing Processes through Industrial Machinery as a Service Approach

Virgilio Gilart-Iglesias, Francisco Maciá-Pérez, Diego Marcos-Jorquera, Francisco J. Mora-Jimeno, and Juan A. Gil-Martínez-Abarca

Policy Driven Services Coordination for Building Social Networks Based Applications

Javier A. Espinosa-Oviedo, Genoveva Vargas-Solar, José Luis Zechinelli-Martini, and Christine Collet

Decentralized Service Management Based on Homophily for Self-Adaptive SOMAS

E. del Val, M. Rebollo, and V. Botti

SPARQL-to-SQL Query Translation: Bottom-Up or Top-Down?

Andrey Kashlev and Artem Chebotko

Work-in-Progress Track 4: Services QoS

Policy Consolidation and Privacy-Vital Information Flow Control in Composite Services

Yang Zhang and Jun-Liang Chen

Multi Domain-Specific Modeling of the Security Concerns of Service-Oriented Architectures

Juan Pedro Silva Gallino, Miguel de Miguel, Javier F. Briones, and Alejandro Alonso

On the Performance of Hosting Web Services on Mobile Devices

Rabeb Mizouni, M. Adel Serhani, Rachida Dssouli, Abdelghani Benharref, and Ikbal Taleb

SlapOS: A Multi-Purpose Distributed Cloud Operating System Based on an ERP Billing Model

Jean-Paul Smets-Solanes, Christophe Cérin, and Romain Courteaud

Towards Financial Planning as a Service

Jochen Martin, Simon Caton, Tobias Conte, and Christof Weinhardt