

Premier Reference Source

Web-Based Services

Concepts, Methodologies, Tools, and Applications



Information Resources Management Association



Volume IV

Web-Based Services

Concepts, Methodologies, Tools, and Applications

The recent explosion of digital media, online networking, and e-commerce has generated great new opportunities for those Internet-savvy individuals who see potential in new technologies and can turn those possibilities into reality. It is vital for such forward-thinking innovators to stay abreast of all the latest technologies.

Web-Based Services: Concepts, Methodologies, Tools, and Applications

provides readers with comprehensive coverage of some of the latest tools and technologies in the digital industry. The chapters in this multi-volume book describe a diverse range of applications and methodologies made possible in a world connected by the global network, providing researchers, computer scientists, web developers, and digital experts with the latest knowledge and developments in Internet technologies.

Topics Covered:

- Cloud Computing
- Embedded Real-Time Systems
- Fault Tolerance
- Model-Driven Approaches
- Quality of Service
- Semantic Web
- Service-Driven Computing
- Social Web Services
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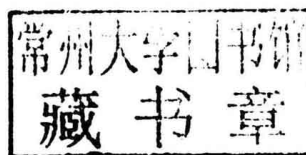
Web-Based Services



Web-Based Services: Concepts, Methodologies, Tools, and Applications

Information Resources Management Association
USA

Volume IV



Information Science
REFERENCE

An Imprint of IGI Global

Published in the United States of America by
Information Science Reference (an imprint of IGI Global)
701 E. Chocolate Avenue
Hershey PA, USA 17033
Tel: 717-533-8845
Fax: 717-533-8661
E-mail: cust@igi-global.com
Web site: <http://www.igi-global.com>

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Library of Congress Cataloging-in-Publication Data

Web-based services : concepts, methodologies, tools, and applications / Information Resources Management Association, editor.

pages cm

Includes bibliographical references and index.

ISBN 978-1-4666-9466-8 (hardcover) -- ISBN 978-1-4666-9467-5 (ebook) 1. Information technology--Management. 2. Management information systems. 3. Service-oriented architecture (Computer science) I. Information Resources Management Association, editor.

HD30.2.W425 2016

658.4'038011--dc23

2015031353

British Cataloguing in Publication Data

A Cataloguing in Publication record for this book is available from the British Library.

All work contributed to this book is new, previously-unpublished material. The views expressed in this book are those of the authors, but not necessarily of the publisher.

For electronic access to this publication, please contact: eresources@igi-global.com.

Editor-in-Chief

Mehdi Khosrow-Pour, DBA

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Preface

The constantly changing landscape of Web-Based Services makes it challenging for experts and practitioners to stay informed of the field's most up-to-date research. That is why Information Science Reference is pleased to offer this three-volume reference collection that will empower students, researchers, and academicians with a strong understanding of critical issues within Web-Based Services by providing both broad and detailed perspectives on cutting-edge theories and developments. This reference is designed to act as a single reference source on conceptual, methodological, technical, and managerial issues, as well as provide insight into emerging trends and future opportunities within the discipline.

Web-Based Services: Concepts, Methodologies, Tools and Applications is organized into eight distinct sections that provide comprehensive coverage of important topics. The sections are:

1. Fundamental Concepts and Theories;
2. Development and Design Methodologies;
3. Tools and Technologies;
4. Utilization and Application;
5. Organizational and Social Implications;
6. Managerial Impact;
7. Critical Issues; and
8. Emerging Trends.

The following paragraphs provide a summary of what to expect from this invaluable reference tool.

Section 1, "Fundamental Concepts and Theories," serves as a foundation for this extensive reference tool by addressing crucial theories essential to the understanding of Web-Based Services. Introducing the book is *Service-Driven Computing with APIs: Concepts, Frameworks, and Emerging Trends* by Hiranya Jayathilaka, Chandra Krintz, and Rich Wolski; a great foundation laying the groundwork for the basic concepts and theories that will be discussed throughout the rest of the book. Another chapter of note in Section 1 is titled *Making Sense of the E-Service Quality Literature: Sampling, Undergraduates, and Replications* by Sharron J. Lennon and Jung-Hwan Kim. Section 1 concludes, and leads into the following portion of the book with a nice segue chapter, *A Review on Semantic Text and Multimedia Retrieval and Recent Trends* by Oğuzhan Menemencioğlu and İlhami Muharrem Orak.

Section 2, "Development and Design Methodologies," presents in-depth coverage of the conceptual design and architecture of Web-Based Services. Opening the section is *A Resource Allocation Model for Desktop Clouds* by Abdulelah Alwabel, Robert John Walters, and Gary B. Wills. Through case studies, this section lays excellent groundwork for later sections that will get into present and future ap-

plications for Web-Based Services, including, of note: *Sustainable Cloud Computing Frameworks for E-Government: Best Practices in Italian Municipalities* by Sabrina Leone and Giovanni Biancofiore; and *Design Challenges of Cloud Computing* by Mouna Jouini and Latifa Ben Arfa Rabai. The section concludes with an excellent work by Victor Chang, Robert John Walters, and Gary B. Wills, titled *Cloud Computing and Frameworks for Organisational Cloud Adoption*.

Section 3, “Tools and Technologies,” presents extensive coverage of the various tools and technologies used in the implementation of Web-Based Services. Section 3 begins where Section 2 left off, though this section describes more concrete tools at place in the modeling, planning, and applications of Web-Based Services. The first chapter, *Building Elastic Java Application Services Seamlessly in the Cloud: A Middleware Framework* by Rostyslav Zabolotnyi, Philipp Leitner, and Schahram Dustdar, lays a framework for the types of works that can be found in this section. Section 3 is full of excellent chapters like this one, including such titles as *Cloud Security Using Ear Biometrics* by Santosh Kumar, Ali Imam Abidi, and Sanjay Kumar Singh; and *Data Security for Software as a Service* by Pradeep Kumar Tiwari and Sandeep Joshi. The section concludes with *Two Factor Authentication using M-pin Server for Secure Cloud Computing Environment* by Nitin Nagar and Ugrasen Suman. Where Section 3 described specific tools and technologies at the disposal of practitioners, Section 4 describes the use and applications of the tools and frameworks discussed in previous sections.

Section 4, “Utilization and Application,” describes how the broad range of Web-Based Services efforts has been utilized and offers insight on and important lessons for their applications and impact. The first chapter in the section is titled *Analyzing French and Italian iPhone 4S Mobile Cloud Customer Satisfaction Presented by Organizational Sustainability Modeling* written by Victor Chang. This section includes the widest range of topics because it describes case studies, research, methodologies, frameworks, architectures, theory, analysis, and guides for implementation. The breadth of topics covered in the chapter is also reflected in the diversity of its authors, from countries all over the globe. A good chapter to note is *Multi-Cloud Data Management using Shamir’s Secret Sharing and Quantum Byzantine Agreement Schemes* by Mohammed A. AlZain, Alice S. Li, Ben Soh, and Eric Pardede. The section concludes with *Exploring the Three- Path Mediation Model: A Study of Customer Perceived Value, Customer Satisfaction Service Quality and Behavioral Intention Relationship* by Manish Kumar Yadav, Alok Kumar Rai, and Medha Srivastava, a great transition chapter into the next section.

Section 5, “Organizational and Social Implications,” includes chapters discussing the organizational and social impact of Web-Based Services. The section opens with *Analysis of Cloud Services on Business Processes in the Digitalization of the Consumer Product Industry* by Ute Riemann. Where Section 4 focused on the broad, many applications of Web-Based Services technology, this section focuses exclusively on how these technologies affect human lives, either through the way they interact with each other, or through how they affect behavioral/workplace situations. The section concludes with *The Role of Cloud Computing in Global Supply Chain* by Kijpokin Kasemsap.

Section 6, “Managerial Impact,” presents focused coverage of Web-Based Services in a managerial perspective. This section serves as a vital resource for developers who want to utilize the latest research to bolster the capabilities and functionalities of their processes. The section begins with *Management of Privacy and Security in Cloud Computing: Contractual Controls in Service Agreements* by Deniz Tuncalp. The chapters in this section offer unmistakable value to managers looking to implement new strategies that work at larger bureaucratic levels. The section concludes with *Customer Satisfaction via Service Quality Dimensions: An Empirical Research on Stock Broking Services: CS VIA SQD* by Gyaneshwar Singh Kushwaha and Shiv Ratan Agrawal.

Section 7, “Critical Issues,” presents coverage of academic and research perspectives on Web-Based Services tools and applications. The section begins with *Cloud Adoption in Enterprises: Security Issues and Strategies* by Ramanathan Venkatraman and Sitalakshmi Venkatraman. Chapters in this section will look into theoretical approaches and offer alternatives to crucial questions on the subject of Web-Based Services. The section concludes with *QoS in the Mobile Cloud Computing Environment* by Zhefu Shi and Cory Beard.

Section 8, “Emerging Trends,” highlights areas for future research within the field of Web-Based Services, opening with *Towards Semantic Mashups: Tools, Methodologies, and State of the Art* by Aikaterini K. Kalou and Dimitrios A. Koutsomitropoulos. This section contains chapters that look at what might happen in the coming years that can extend the already staggering amount of applications for Web-Based Services. The final chapter of the book looks at an emerging field within Web-Based Services, in the excellent contribution, *A New Approach in Cloud Computing User Authentication* by Alaa Hussein Al-Hamami and Rafal A. Al-Khashab.

Although the primary organization of the contents in this multi-volume work is based on its eight sections, offering a progression of coverage of the important concepts, methodologies, technologies, applications, social issues, and emerging trends, the reader can also identify specific contents by utilizing the extensive indexing system listed at the end of each volume. As a comprehensive collection of research on the latest findings related to using technology to providing various services, *Web-Based Services: Concepts, Methodologies, Tools and Applications*, provides researchers, administrators and all audiences with a complete understanding of the development of applications and concepts in Web-Based Services. Given the vast number of issues concerning usage, failure, success, policies, strategies, and applications of Web-Based Services in countries around the world, *Web-Based Services: Concepts, Methodologies, Tools and Applications* addresses the demand for a resource that encompasses the most pertinent research in technologies being employed to globally bolster the knowledge and applications of Web-Based Services.

List of Contributors

Abidi, Ali Imam / <i>Indian Institute of Technology, India</i>	823
Adams, Carl / <i>University of Portsmouth, UK</i>	1891
Addya, Sourav Kanti / <i>National Institute of Technology, India</i>	783
Agrawal, Shiv Ratan / <i>Maulana Azad National Institute of Technology (MANIT), India</i>	1712,1829
Ahirwar, Mahendra Kumar / <i>University Institute of Technology-RGPV, India</i>	585
Ahmud-Boodoo, Raadila Bibi Mahmud Hajee / <i>Curtin University, Australia</i>	24
Alam, Nihal / <i>The Energy and Resources Institute (TERI), India</i>	1256
Alcaraz-Calero, Jose M. / <i>University of the West of Scotland, UK</i>	906
Alelaiwi, Abdulhameed A. / <i>King Saud University, Saudi Arabia</i>	1283
Al-Hamami, Alaa Hussein / <i>Amman Arab University, Jordan</i>	2402
Alhyari, Mohammad / <i>The World Islamic Sciences and Education University, Jordan</i>	2182
Alhyari, Salah / <i>The World Islamic Sciences and Education University, Jordan</i>	2182
Al-Khashab, Rafal A / <i>Amman Arab University, Jordan</i>	2402
Almutairi, Laila / <i>Central Bank of Kuwait, Kuwait</i>	1223
Alwabel, Abdulelah / <i>University of Southampton, UK</i>	356
AlZain, Mohammed A. / <i>Taif University, Saudi Arabia</i>	1205
Amos, Christopher I / <i>Dartmouth College, USA</i>	67
Aquilani, Barbara / <i>Tuscia University, Italy</i>	377
Atzeni, Andrea / <i>Politecnico di Torino, Italy</i>	112
Barać, Dušan / <i>University of Belgrade, Serbia</i>	1027
Basdekis, Ioannis / <i>Institute of Computer Science – Foundation for Research and Technology – Hellas (ICS-FORTH), Greece</i>	1477
Beard, Cory / <i>University of Missouri – Kansas City, USA</i>	2221
Belala, Faïza / <i>University of Constantine 2, Algeria</i>	471
Benzadri, Zakaria / <i>University of Constantine 2, Algeria</i>	471
Bezbaruah, M. P. / <i>Gauhati University, India</i>	1316
Bhoskar, Ranjana D. / <i>Visvesvaraya National Institute of Technology, India</i>	187
Biancofiore, Giovanni / <i>giovannibancofiore.com, Italy</i>	528
Bibi, Stamatia / <i>Aristotle University of Thessaloniki, Greece</i>	88
Bilgen, Semih / <i>Middle East Technical University, Turkey</i>	251
Biswas, Satarupa / <i>Tripura University, India</i>	2076
Bogdanović, Zorica / <i>University of Belgrade, Serbia</i>	982
Bouanaka, Chafia / <i>University of Constantine 2, Algeria</i>	471
Bouloukakis, Georgios / <i>Inria Paris-Rocquencourt, France</i>	1477

Bousselham, Abdelkader / <i>Qatar Environment and Energy Research Institute, Qatar</i>	2373
Bozanis, Panayiotis / <i>University of Thessaly, Greece</i>	88
Casadesus, Marti / <i>Universitat Internacional de Catalunya, Spain</i>	1786
Cegielski, Casey / <i>Auburn University, USA</i>	1534
Chai, Yi / <i>Chongqing University, China</i>	2001
Chaka, Chaka / <i>Tshwane University of Technology, South Africa</i>	1138
Chaleplioglou, Artemis / <i>Academy of Athens, Greece</i>	2385
Chang, Jen-Chi / <i>Nankai University, China</i>	431
Chang, Kuo-Chung / <i>Yuan Ze University, Taiwan</i>	1088
Chang, Shu-Fong / <i>Nankai University, China</i>	431
Chang, Victor / <i>Leeds Beckett University, UK</i>	683,1068
Chaudhuri, Abhik / <i>Tata Consultancy Services, India</i>	139
Chen, Wei / <i>The University of Texas MD Anderson Cancer Center, USA</i>	67
Choudhuri, Partha Sarathi / <i>University of Burdwan, India</i>	1465
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Cruickshank, Haitham / <i>University of Surrey, UK</i>	290
Damaskos, Christos / <i>NCSR Demokritos, Greece</i>	2345
Debata, Bikash Ranjan / <i>University of Macau, China</i>	1433
Deshpande, Ravikant M. / <i>Visvesvaraya National Institute of Technology, India</i>	187
Diakoumakos, George / <i>NCSR Demokritos, Greece</i>	2345
Dikaiakos, Marios D. / <i>University of Cyprus, Cyprus</i>	1937
Dustdar, Schahram / <i>Vienna University of Technology, Austria</i>	709,1937
El Houssaini, Charafeddine / <i>Mohammed V University, Morocco</i>	668
Eldred, Morgan / <i>University of Portsmouth, UK</i>	1891
Faci, Noura / <i>Claude Bernard Lyon 1 University, France</i>	204
Faheem, Muhammad / <i>University College Dublin, Ireland</i>	2324
Fan, Ziyuan / <i>University of Technology, Australia</i>	1873
Ferreira, Osvaldo / <i>Universidade Portucalense, Portugal</i>	1675
Firdhous, Mohamed / <i>University of Moratuwa, Sri Lanka</i>	451,496
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Fowley, Frank / <i>Dublin City University, Ireland</i>	620
Gardikis, Georgios / <i>NCSR Demokritos, Greece</i>	2345
Gatautis, Rimantas / <i>Kaunas University of Technology, Lithuania</i>	964
Gebremeskel, Gebeyehu Belay / <i>Chongqing University, China</i>	2001
Giannakopoulos, Ioannis / <i>National University of Athens, Greece</i>	1937
Good, Alice / <i>University of Portsmouth, UK</i>	1891
Gopalakrishnan, S. / <i>National Institute of Fashion Technology, India</i>	945
Grašič, Boštjan / <i>University of Maribor, Slovenia</i>	610
Grecos, Christos / <i>University of the West of Scotland, UK</i>	906
Gyampoh-Vidogah, Regina / <i>Independent Researcher, UK</i>	1111
Hashemi, Sajjad / <i>Islamic Azad University Miandoab Branch, Iran</i>	1727
Hashemi, Seyyed Yasser / <i>Islamic Azad University Miandoab Branch, Iran</i>	1727
Hauswirth, Manfred / <i>Technical University of Berlin, Germany & Fraunhofer FOKUS, Germany</i>	272
He, Bingsheng / <i>Nanyang Technological University, Singapore</i>	1914
He, Wu / <i>Old Dominion University, USA</i>	881
He, Zhongshi / <i>Chongqing University, China</i>	2001

Hee, Jee Mei / <i>Universiti Teknologi Malaysia, Malaysia</i>	2267
Humphrey, Marty / <i>University of Virginia, USA</i>	2159
Ibrahim, Othman Bin / <i>Universiti Teknologi Malaysia, Malaysia</i>	849
Jafarkarimi, Hosein / <i>Universiti Teknologi Malaysia, Malaysia & Islamic Azad University of Damavand, Iran</i>	2267
Jaiswal, Sumit / <i>Indian Institute of Technology, India</i>	809
Jararweh, Yaser / <i>Jordan University of Science and Technology, Jordan</i>	2373
Jarrah, Moath / <i>Jordan University of Science and Technology, Jordan</i>	2373
Jasmine, K. S. / <i>Visvesvaraya Technological University, India</i>	2285
Jayathilaka, Hiranya / <i>University of California – Santa Barbara, USA</i>	1
Jeyakumaran, M. / <i>Kalasalingam University, India</i>	2122
Jia, Lin / <i>Auburn University, USA</i>	1534
Joshi, Sandeep / <i>Manipal University, India</i>	864
Jouini, Mouna / <i>Institut Supérieur de Gestion, Tunisia</i>	561
Jovanić, Branislav / <i>University of Belgrade, Serbia</i>	1027
Kajan, Ejub / <i>State University of Novi Pazar, Serbia</i>	204
Kalita, Basanta / <i>Tezpur College, India</i>	1316
Kalou, Aikaterini K. / <i>University of Patras, Greece</i>	2240
Kapoor, Praveen / <i>University of Petroleum & Energy Studies, India</i>	1270
Karmakar, Ranjan / <i>The Energy and Resources Institute (TERI), India</i>	1256
Kasemsap, Kijpokin / <i>Suan Sunandha Rajabhat University, Thailand</i>	1556,1611
Katsaros, Dimitrios / <i>University of Thessaly, Greece</i>	88
Katzis, Konstantinos / <i>European University Cyprus, Cyprus</i>	1747
Kechadi, Tahar / <i>University College Dublin, Ireland</i>	2324
Kibirige, George / <i>Sokoine University of Agriculture, Tanzania</i>	1968
Kierkegaard, Sylvia / <i>International Association of IT Lawyers, Denmark</i>	2032
Kim, Jung-Hwan / <i>University of South Carolina, USA</i>	160
Kissaka, Mussa M. / <i>University of Dar es Salaam, Tanzania</i>	1191
Kocabas, Ovunc / <i>University of Rochester, USA</i>	1111
Konstantinou, Ioannis / <i>National University of Athens, Greece</i>	1937
Koumaras, Harilaos / <i>NCSR Demokritos, Greece</i>	2345
Koumaras, Vaios / <i>NCSR Demokritos, Greece</i>	2345
Kourtis, Michail-Alexandros / <i>NCSR Demokritos, Greece</i>	2345
Koutsomitropoulos, Dimitrios A. / <i>University of Patras, Greece</i>	2240
Krintz, Chandra / <i>University of California – Santa Barbara, USA</i>	1
Kriouile, Abdelaziz / <i>Mohammed V University, Morocco</i>	668
Krishnaswamy, Shonali / <i>Institute for Infocomm Research (I2R), Singapore</i>	272
Kumar, Dilip / <i>National Institute of Technology, India</i>	760
Kumar, Santosh / <i>Indian Institute of Technology, India</i>	809,823,2055
Kumar, Vikas / <i>Asia-Pacific Institute of Management, India</i>	2197
Kushwaha, Gyaneshwar Singh / <i>Maulana Azad National Institute of Technology (MANIT), India</i>	1712,1829
Labus, Aleksandra / <i>University of Belgrade, Serbia</i>	982
Le, Hung Duc / <i>Vienna University of Technology, Austria</i>	1937
Lee, Ki-Hoon / <i>Griffith University, Australia</i>	56
Lee, Yu-Cheng / <i>Chung-Hua University, Taiwan</i>	431

Leitner, Philipp / <i>University of Zurich, Switzerland</i>	709
Le-Khac, Nhien An / <i>University College Dublin, Ireland</i>	2324
Lennon, Sharron J. / <i>Indiana University, USA</i>	160
Leone, Sabrina / <i>Università Politecnica delle Marche, Italy</i>	528
Li, Alice S. / <i>La Trobe University, Australia</i>	1205
Li, Yuan / <i>Columbia College, USA</i>	1088
Li, Yuan-Fang / <i>Monash University, Australia</i>	272
Liao, Ying Ying / <i>Hamdan Bin Mohammed Smart University, UAE</i>	1388
Lin, Kuo-Hua / <i>Nankai University, China</i>	431
Loulloudes, Nicholas / <i>University of Cyprus, Cyprus</i>	1937
Loverdos, Christos K. K. / <i>Greek Research and Technology Network, Greece</i>	1937
Lowry, Paul Benjamin / <i>City University of Hong Kong, Hong Kong</i>	1223
Luo, Chunbo / <i>University of the West of Scotland, UK</i>	906
Ma, Maode / <i>Nanyang Technological University, Singapore</i>	1914
Maamar, Zakaria / <i>Zayed University, UAE</i>	204
Mahapatra, S. S. / <i>National Institute of Technology Rourkela, India</i>	1433
Majumder, Abhishek / <i>Tripura University, India</i>	2076
Mandal, Tarni / <i>National Institute of Technology, India</i>	760
Mao, Ming / <i>University of Virginia, USA</i>	2159
Marimon, Frederic / <i>Universitat Internacional de Catalunya, Spain</i>	1786
Mehrez, Ahmed / <i>Qatar University, Qatar</i>	56
Menemencioglu, Oğuzhan / <i>Karabük University, Turkey</i>	335
Milić, Aleksandar / <i>University of Belgrade, Serbia</i>	982
Mohammed, Fathey / <i>Universiti Teknologi Malaysia, Malaysia & Taiz University, Yemen</i>	849
Moldovan, Daniel / <i>Vienna University of Technology, Austria</i>	1937
Monfaredi, Khalil / <i>Islamic Azad University Miandoab Branch, Iran</i>	1727
Moreira, Fernando / <i>Universidade Portucalense, Portugal</i>	1675
Mouakket, Samar / <i>University of Sharjah, UAE</i>	1509
Mtebe, Joel S. / <i>University of Dar es Salaam, Tanzania</i>	1191
Nagar, Nitin / <i>Devi Ahiliya University, India</i>	1053
Nagymate, Zoltán / <i>University of Miskolc, Hungary</i>	1162
Narang, Ritu / <i>University of Lucknow, India</i>	1803
Nassar, Mahmoud / <i>Mohammed V University, Morocco</i>	668
Nguyen, Hai H. / <i>University of Aberdeen, UK</i>	272
Nightingale, James / <i>University of the West of Scotland, UK</i>	906
Omran, Sally Kamel Ali / <i>Cairo University, Egypt</i>	1413
Opala, Omondi John / <i>Devry University, USA & Cisco Systems, USA</i>	1283
Orak, İlhami Muharrem / <i>Karabük University, Turkey</i>	335
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Panwar, Upendra Singh / <i>SGSITS, India</i>	1774
Papailiou, Nikolaos / <i>National University of Athens, Greece</i>	1937
Pardede, Eric / <i>La Trobe University, Australia</i>	1205
Patel, Subhash Chandra / <i>Indian Institute of Technology, India</i>	809
Patle, Bharati V. / <i>Visvesvaraya National Institute of Technology, India</i>	187

Patnaik, Bhaswati / <i>National Institute of Technology Rourkela, India</i>	1433
Pencheva, Evelina / <i>Technical University of Sofia, Bulgaria</i>	646
Peng, Bo / <i>The University of Texas MD Anderson Cancer Center, USA</i>	67
Pervez, Zeeshan / <i>University of the West of Scotland, UK</i>	906
Podgorelec, Vili / <i>University of Maribor, Slovenia</i>	610
Priya, B. Shanmuga / <i>Kalasalingam University, India</i>	2122
Puri, Roma / <i>IILM, India</i>	733
Rabai, Latifa Ben Arfa / <i>Institut Supérieur de Gestion, Tunisia</i>	561
Radenković, Miloš / <i>Union University, Serbia</i>	1027
Rahman, Shawon S. M. / <i>University of Hawaii-Hilo, USA & King Saud University, Saudi Arabia</i>	1283
Rai, Alok Kumar / <i>Banaras Hindu University, India</i>	1328
Ratten, Vanessa / <i>La Trobe University, Australia</i>	1496
Rawat, Ajay / <i>University of Petroleum & Energy Studies, India</i>	1270
Riemann, Ute / <i>SAP Deutschland AG & Co. KG, Germany</i>	1351,2096
Rouibah, Kamel / <i>Kuwait University, Kuwait</i>	1223
Roy, Sudipta / <i>Assam University, India</i>	2076
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Saadatdoost, Robab / <i>Universiti Teknologi Malaysia, Malaysia & Islamic Azad Univeristy of Parand, Iran</i>	2267
Sadhya, Debanjan / <i>Indian Institute of Technology, India</i>	2055
Sahoo, Bibhudatta / <i>National Institute of Technology, India</i>	760,783
Salama, Maria / <i>British University in Egypt, Egypt</i>	2299
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Serpico, Elsa / <i>Tuscia University, Italy</i>	377
Shawish, Ahmed / <i>Ain Shams University, Egypt</i>	2299
Sheridan, Craig / <i>FLEXIANT, UK</i>	1937
Shi, Zhefu / <i>University of Missouri – Kansas City, USA</i>	2221
Shukla, Piyush Kumar / <i>University Institute of Technology RGPV, India</i>	585
Siakoulis, Thomas / <i>NCSR Demokritos, Greece</i>	2345
Silvestri, Cecilia / <i>Tuscia University, Italy</i>	377
Sim, Alex Tze Hiang / <i>Universiti Teknologi Malaysia, Malaysia</i>	2267
Singh, Durgesh / <i>Indian Institute of Technology, India</i>	2055
Singh, Jitendra / <i>University of Delhi, India</i>	2197
Singh, R. S. / <i>Indian Institute of Technology, India</i>	809
Singh, Sanjay Kumar / <i>Indian Institute of Technology, India</i>	809,823,2055
Singh, Smita / <i>University of Lucknow, India</i>	1803
Siringo, Andrea / <i>Former Student at Politecnico di Torino, Italy</i>	112
Smiraglia, Paolo / <i>Politecnico di Torino, Italy</i>	112
Sofokleous, Chrystalla / <i>University of Cyprus, Cyprus</i>	1937
Soh, Ben / <i>La Trobe University, Australia</i>	1205

Soliman, Fawzy / <i>University of Technology, Australia</i>	56,745
Soltani, Ebrahim / <i>Hamdan Bin Mohammed Smart University, UAE</i>	1388
Soyata, Tolga / <i>University of Rochester, USA</i>	1111
Srivastava, Medha / <i>Banaras Hindu University, India</i>	1328
Star, Kam / <i>Playgen, UK</i>	1937
Stephanidis, Constantine / <i>Institute of Computer Science – Foundation for Research and Technology – Hellas (ICS-FORTH), Greece & University of Crete, Greece</i>	1477
Strang, Kenneth David / <i>APPC Research, Australia & State University of New York, USA</i>	221
Sudha, M. / <i>RVisvesvaraya Technological University, India</i>	2285
Suman, Ugrasen / <i>Devi Ahiliya University, India</i>	1053
Sun, Zhili / <i>University of Surrey, UK</i>	290
Sushil, Rama / <i>DIT University, India</i>	1270
T.M., Kalpana / <i>Shri AMM Murugappa Chettiar Research Centre, India</i>	945
Tiwari, Pradeep Kumar / <i>Manipal University, India</i>	864
Trihinas, Demetris / <i>University of Cyprus, Cyprus</i>	1937
Truong, Dothang / <i>Embry-Riddle Aeronautical University, USA</i>	1694
Truong, Hong-Linh / <i>Vienna University of Technology, Austria</i>	1937
Tsai, Sang-Bing / <i>University of Electronic Science and Technology of China, China & Nankai University, China</i>	431
Tuncalp, Deniz / <i>Istanbul Technical University, Turkey</i>	1585
Turuk, Ashok Kumar / <i>National Institute of Technology, India</i>	783
Ugljanin, Emir / <i>State University of Novi Pazar, Serbia</i>	204
Venkatraman, Ramanathan / <i>National University of Singapore, Singapore</i>	1848
Venkatraman, Sitalakshmi / <i>NMIT, Australia</i>	1848
Vitkauskaitė, Elena / <i>Kaunas University of Technology, Lithuania</i>	964
Walters, Robert John / <i>University of Southampton, UK</i>	356,683
Wan, Yun / <i>University of Houston - Victoria, USA</i>	67
Wang, Feng-Kwei / <i>Chinese Culture University, Taiwan</i>	881
Wang, Qi / <i>University of the West of Scotland, UK</i>	906
Wang, Wei-Yuan / <i>Shih-Chien University, Taiwan</i>	1388
Wang, Xinheng / <i>University of the West of Scotland, UK</i>	906
Warren, Matthew / <i>Deakin University, Australia</i>	307
Wills, Gary B. / <i>University of Southampton, UK</i>	356,683
Wolski, Rich / <i>University of California – Santa Barbara, USA</i>	1
Wu, Chao / <i>Nankai University, China</i>	431
Xilouris, George / <i>NCSR Demokritos, Greece</i>	2345
Xing, Wei / <i>CRUK Manchester Institute, UK</i>	1937
Xu, Amanda / <i>New York University, USA</i>	1641
Yadav, Manish Kumar / <i>Banaras Hindu University, India</i>	1328
Yan, Zi-Chun / <i>Nankai University, China</i>	431
Yang, Sharon Q. / <i>Rider University, USA</i>	1641
Yang, Yichao / <i>University of Surrey, UK</i>	290
Yarlikas, Serdar / <i>Middle East Technical University, Turkey</i>	251
Yaya, Luc Honore Petnji / <i>Universitat Internacional de Catalunya, Spain</i>	1786
Yeoh, William / <i>Deakin University, Australia</i>	307
Yu, Bin / <i>Nankai University, China</i>	431

Zabolotnyi, Rostyslav / *Vienna University of Technology, Austria* 709

Zhang, Li / *Northeastern University at Shenyang, China*..... 620

Zhang, Qinsheng / *Ocean University of China, China*..... 1534

Zhang, Yuqing / *Xidian University, China* 1914

Zhao, Qianqian / *Xidian University, China*..... 1914

Zhou, Jie / *Nankai University, China*..... 431

Zhou, Yanbo / *University of Surrey, UK*..... 290