Lecture Notes in Computer Science 5183

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

Editorial Board

David Hutchison
Lancaster University, UK

Takeo Kanade
Carnegie Mellon University, Pittsburgh, PA, USA

Josef Kittler
University of Surrey, Guildford, UK

Jon M. Kleinberg
Cornell University, Ithaca, NY, USA

Alfred Kobsa
University of California, Irvine, CA, USA

Friedemann Mattern
ETH Zurich, Switzerland

John C. Mitchell
Stanford University, CA, USA

Moni Naor
Weizmann Institute of Science, Rehovot, Israel

Oscar Nierstrasz
University of Bern, Switzerland

C. Pandu Rangan
Indian Institute of Technology, Madras, India

Bernhard Steffen
University of Dortmund, Germany

Madhu Sudan
Massachusetts Institute of Technology, MA, USA

Demetri Terzopoulos
University of California, Los Angeles, CA, USA

Doug Tygar
University of California, Berkeley, CA, USA

Gerhard Weikum
Max-Planck Institute of Computer Science, Saarbruecken, Germany
E-Commerce and Web Technologies

9th International Conference, EC-Web 2008
Turin, Italy, September 3-4, 2008
Proceedings
Preface

The International Conference on E-commerce and Web Technologies (EC-Web) is a mature and well-established forum for researchers working in the area of electronic commerce and web technologies.

These are the proceedings of the ninth conference in the series, which, like previous EC-Web conferences, was co-located with DEXA, the International Conference on Database and Expert Systems Applications, which, this year, took place in Turin, Italy.

One key feature of EC-Web is its two-fold nature: it brings together both papers proposing technological solutions for e-commerce and the World Wide Web, and papers concerning the management of e-commerce, such as web marketing, the impact of e-commerce on business processes and organizations, the analysis of case studies, as well as social aspects of e-commerce (to understand the impact of e-commerce solutions on day-to-day life and the new opportunities that these behaviors open).

The technical program included 12 reviewed papers and two invited papers. Each paper was reviewed by five reviewers, in order to select only the best quality papers. The program included five sessions: “Security in E-Commerce” (with two papers), “Social Aspects of E-Commerce” (with two papers), “Business Process and EC Infrastructures” (with three papers), “Recommender Systems and E-Negotiations” (with four papers) and “Web Marketing and User Profiling” (with three papers).

We found the program interesting and we hope participants and readers feel the same. Furthermore, we hope the attendees enjoyed the conference and Turin.

June 2008

Giuseppe Psaila
Roland R. Wagner
Organization

Program Committee Chairpersons

Giuseppe Psaila University of Bergamo, Italy
Roland Wagner FAW, University of Linz, Austria

Program Committee

Marco Aiello Rijksuniversiteit Groningen, The Netherlands
Esma Aïmeur University of Montreal, CA
Damminda Alahakoon Monash University, Australia
Sergio Alonso University of Granada, Spain
Jörn Altmann Seoul National University, South Korea and Intl.

University of Bruchsal, Germany

Manish Bhide IBM India Research Lab, India
Sami Bhiri DERI, Ireland
Sourav S. Bhowmick Nanyang Technological University, Singapore
Susanne Boll University of Oldenburg, Germany
Stephane Bressan National University of Singapore, Singapore
Julián Briz Universidad Politécnica de Madrid, Spain
Michelangelo Ceci University of Bari, Italy
Wojciech Cellary Poznan University of Economics, Poland
Francisco Chiclana De Montfort University, UK
Byron Choi Nanyang Technological University, Singapore
Jen-Yao Chung IBM Watson Research Center, USA
Emmanuel Coquery University Lyon 1, France
Arthur I. Csetenyi Budapest Corvinus University, Hungary
Alfredo Cuzzocrea University of Calabria, Italy
Radoslav Delina Technical University of Kosice, Slovakia
Alexander Delteil Orange Labs - France Télécom, France
Tomaso Di Noia Politecnico di Bari, Italy
Petr Doucek Prague University of Economics, Czech Republic
Schahram Dustdar Vienna University of Technology, Austria
Johann Eder University of Klagenfurt, Austria
Maria Jose Escalona Universidad de Sevilla, Spain
Torsten Eymann University of Bayreuth, Germany
Eduardo Fernandez Florida Atlantic University, USA
Gianluigi Ferrari University of Pisa, Italy
Elena Ferrari University of Insubria, Italy
George Feuerlicht University of Technology Sydney, Australia
Ludger Fiege Siemens, Germany
<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carlos Flavian</td>
<td>University of Zaragoza, Spain</td>
</tr>
<tr>
<td>Farshad Fotouhi</td>
<td>Wayne State University, USA</td>
</tr>
<tr>
<td>Eduard Cristóbal Fransi</td>
<td>University of Lleida, Spain</td>
</tr>
<tr>
<td>Yongjian Fu</td>
<td>Cleveland State University, USA</td>
</tr>
<tr>
<td>Walid Gaaloul</td>
<td>DERI, Ireland</td>
</tr>
<tr>
<td>Stephane Gagnon</td>
<td>Université du Québec en Outaouais (UQO), Canada</td>
</tr>
<tr>
<td>Jing Gao</td>
<td>University of South Australia, Australia</td>
</tr>
<tr>
<td>Piotr Gawrysiak</td>
<td>Supermedia, Poland</td>
</tr>
<tr>
<td>Peter Geczy</td>
<td>AIST - National Institute of Advanced Industrial Science and Technology, Japan</td>
</tr>
<tr>
<td>Chanan Glezer</td>
<td>Ben Gurion University, Israel</td>
</tr>
<tr>
<td>Claude Godart</td>
<td>University of Nancy &amp; INRIA, France</td>
</tr>
<tr>
<td>Adnene Guabtni</td>
<td>University of New South Wales, Australia</td>
</tr>
<tr>
<td>Mohand-Said Hacid</td>
<td>University Lyon 1, France</td>
</tr>
<tr>
<td>G. Harindranath</td>
<td>Royal Holloway, University of London, UK</td>
</tr>
<tr>
<td>Aboul Ella Hassanien</td>
<td>Kuwait University, Kuwait</td>
</tr>
<tr>
<td>Josef Herget</td>
<td>University of Chur, Switzerland</td>
</tr>
<tr>
<td>Enrique Herrera-Viedma</td>
<td>University of Granada, Spain</td>
</tr>
<tr>
<td>Yigal Hoffner</td>
<td>IBM Zurich Research Lab., Switzerland</td>
</tr>
<tr>
<td>Birgit Hofreiter</td>
<td>University of Technology, Sidney, Australia</td>
</tr>
<tr>
<td>Christian Huemer</td>
<td>Vienna University of Technology, Austria</td>
</tr>
<tr>
<td>Michael C. Jaeger</td>
<td>Berlin University of Technology, Germany</td>
</tr>
<tr>
<td>Fabian Kaiser</td>
<td>Stuttgart University, Germany</td>
</tr>
<tr>
<td>Dimka Karastoyanova</td>
<td>University of Stuttgart, Germany</td>
</tr>
<tr>
<td>Gregory E. Kersten</td>
<td>Concordia University Montreal, Canada</td>
</tr>
<tr>
<td>Hiroyuki Kitagawa</td>
<td>University of Tsukuba, Japan</td>
</tr>
<tr>
<td>Jan Klas</td>
<td>University of Economics, Prague, Czech Republic</td>
</tr>
<tr>
<td>Gabriele Kotsis</td>
<td>Johannes Kepler University Linz, Austria</td>
</tr>
<tr>
<td>Sandeep Krishnamurthy</td>
<td>University of Washington, USA</td>
</tr>
<tr>
<td>Anton Lavrin</td>
<td>Technical University of Kosice, Slovakia</td>
</tr>
<tr>
<td>Juhnyoung Lee</td>
<td>IBM Watson Research Center, USA</td>
</tr>
<tr>
<td>Joerg Leukel</td>
<td>University of Hohenheim, Germany</td>
</tr>
<tr>
<td>Philipp Liegl</td>
<td>Technical University of Vienna, Austria</td>
</tr>
<tr>
<td>Leszek T. Lilien</td>
<td>Western Michigan University, USA</td>
</tr>
<tr>
<td>Antonio Gabriel Lopez</td>
<td>University of Jaen, Spain</td>
</tr>
<tr>
<td>Heiko Ludwig</td>
<td>IBM Watson Research Center, USA</td>
</tr>
<tr>
<td>Olivera Marjanovic</td>
<td>University of Sydney, Australia</td>
</tr>
<tr>
<td>Mário Marques Freire</td>
<td>University of Beira Interior, Portugal</td>
</tr>
<tr>
<td>Luis Martínez Lopez</td>
<td>University of Jaen, Spain</td>
</tr>
<tr>
<td>Massimo Mecella</td>
<td>University of Rome La Sapienza, Italy</td>
</tr>
<tr>
<td>Ralph Mietzner</td>
<td>University of Stuttgart, Germany</td>
</tr>
<tr>
<td>Bamshad Mobasher</td>
<td>DePaul University, USA</td>
</tr>
<tr>
<td>Carlos Molina-Jimenez</td>
<td>University of Newcastle upon Tyne, UK</td>
</tr>
<tr>
<td>Gero Muehl</td>
<td>TU Berlin, Germany</td>
</tr>
<tr>
<td>Guenter Mueller</td>
<td>University of Freiburg, Germany</td>
</tr>
<tr>
<td>Mieczyslaw Muraszkwiewicz</td>
<td>Warsaw University of Technology, Poland</td>
</tr>
</tbody>
</table>
Dirk Neumann  
University of Karlsruhe, Germany

Wee-Keong Ng  
Nanyang Tech. University, Singapore

Ota Novotny  
Prague University of Economics, Czech Republic

Anne-Marie Oostveen  
Oxford Internet Institute, UK

Rolf Oppliger  
eSECURITY Technologies, Switzerland

Stefano Paraboschi  
University of Bergamo, Italy

Jan Paralic  
Technical University of Kosice, Slovakia

Oscar Pastor  
Valencia University of Technology, Spain

Vicente Pelechano  
Technical University of Valencia, Spain

Günther Pernul  
University of Regensburg, Germany

Ilia Petrov  
Technische Universität Darmstadt, Germany

Ivana Podnar Zarko  
FER, University of Zagreb, Croatia

Birgit Proell  
Johannes Kepler University Linz, Austria

Gerald Quirchmayr  
University of Vienna, Austria

Inmaculada Rodríguez-Ardura  
Universitat Oberta de Catalunya, Spain

Michele Ruta  
Politecnico di Bari, Italy

Henryk Rybinski  
Warsaw University of Technology, Poland

Jarogniew Rykowski  
Poznan University of Economics, Poland

Tomas Sabol  
Technical University of Kosice, Slovakia

Paolo Salvaneschi  
University of Bergamo, Italy

Farzad Sanati  
University of Technology, Sydney, Australia

Nandlal L. Sarda  
Indian Institute of Tech. Bombay, India

Yucel Saygin  
Sabanci University, Turkey

Thorsten Scheibler  
University of Stuttgart, Germany

Eusebio Scornavacca  
Victoria University of Wellington, New Zealand

Steffen Staab  
University of Koblenz, Germany

Jens Strueker  
University of Freiburg, Germany

Aixin Sun  
Nanyang Technological University, Singapore

Junichi Suzuki  
University of Massachusetts, Boston, USA

Roger M. Tagg  
University of South Australia, Australia

Samir Tata  
GET/INT CNRS Samovar, France

Stephanie Teufel  
University of Fribourg, Switzerland

Tobias Unger  
Stuttgart University, Germany

Bartel Van de Walle  
Tilburg University, The Netherlands

Willem Jan van den Heuvel  
Tilburg University, The Netherlands

Krishnamurthy Vidyasankar  
Memorial University, St. John's, Canada

Emilija Vuksanovic  
University of Kragujevac, Serbia

Hannes Werthner  
Technical University of Vienna, Austria

Branimir Wetzstein  
University of Stuttgart, Germany

Janusz Wielki  
Opole University of Technology, Poland

Marco Zapletal  
Technical University of Vienna, Austria
Acknowledgement

The work was supported by the PRIN 2006 program of the Italian Ministry of Research, within the project “Basi di dati crittografate” (2006099978)

External Reviewers

Gabriela Vulcu
Nathalie Aquino
Ignacio Panach
Beatriz Marín
Giovanni Giachetti
Sergio España
Francisco Valverde
Nelly C. Fernández
Ludwig Fuchs
Christian Broser
Manuel Resinas
Table of Contents

Session 1 – Security in E-Commerce

Secure Communication between Web Browsers and NFC Targets by the Example of an e-Ticketing System ........................................ 1
  Gerald Madlmayr, Peter Kleeauer, Josef Langer, and Josef Scharinger

A Light Number-Generation Scheme for Feasible and Secure Credit-Card-Payment Solutions ............................................. 11
  Francesco Buccafurri and Gianluca Lax

Session 2 – Social Aspects of E-Commerce

Online Privacy: Measuring Individuals’ Concerns (Invited Paper) ...... 21
  Maria Moloney and Frank Bannister

Analysing the Key Factors of Web Design: A Heuristic Evaluation ..... 31
  Carlos Flavián, Raquel Gurrea, and Carlos Orús

Session 3 – Business Process and EC Infrastructures

Service Architecture Design for E-Businesses: A Pattern-Based Approach (Invited Paper) ............................................. 41
  Veronica Gacitua-Decar and Claus Pahl

An Event-Based Model for the Management of Choreographed Services ......................................................... 51
  Liliana Ardissono, Roberto Furnari, Anna Goy, Giovanna Petrone, and Marino Segnan

A Matchmaking Architecture to Support Innovation by Fostering Supply and Demand of Venture Capital ......................... 61
  Mario Benassi, Tommaso Di Noia, and Alessandro Marino

Session 4 – Recommender Systems and E-Negotiations

Using Expressive Dialogues and Gradient Information to Improve Trade-Offs in Bilateral Negotiations .................................. 71
  Ivan Marsa-Maestre, Miguel A. Lopez-Carmona, Juan R. Velasco, and Bernardo Alarcos
Towards an Interdisciplinary Framework for Automated Negotiation 81  
_Fernando Lopes, A.Q. Novais, and Helder Coelho_

Bargaining Power in Electronic Negotiations: A Bilateral Negotiation Mechanism 92  
_Ricardo Buettner and Stefan Kirn_

Solution Architecture for Visitor Segmentation and Recommendation Generation in Real Time 102  
_Philip Limbeck and Josef Schiefer_

**Session 5 – Web Marketing and User Profiling**

Effects of Cultural Background on Internet Buying Behaviour: Towards a Virtual Global Village? 114  
_Efthymios Constantinides, Carlota Lorenzo, Miguel Ángel Gómez-Borja, and Peter Geurts_

Evolutionary Prediction of Online Keywords Bidding 124  
_Liwen Hou, Liping Wang, and Jinggang Yang_

Web Behaviormetric User Profiling Concept 134  
_Peter Géczy, Noriaki Izumi, Shotaro Akaho, and Kōiti Hasida_

**Author Index** 145