Proceedings

First Latin American Web Congress

LA-WEB 2003

Santiago 2003

Empowering Our Web, November 10-12
http://la-web.org/
TABLE OF CONTENTS

FOREWORD .................................................................

PREFACE ........................................................................

CONFERENCE ORGANIZATION ........................................

MAIN TRACKS

Extracting Knowledge from Association Relationships to Build Navigational Models ........................................................................................................
M. Albert, V. Pelechano, J. Fons, G. Rojas, and O. Pastor

Evolution of the Chilean Web Structure Composition ........................................................................................................
R. Baeza-Yates and B. Poblete

Policy and State Based Secure Wrapper and Its Application to Mobile Agents ........................................................
A. Binun and E. Gudes

Storing RDF as a Graph ........................................................
V. Bönström, A. Hinze, and H. Schweppe

On the Evolution of Clusters of Near-Duplicate Web Pages ........................................................................
D. Fetterly, M. Manasse, and M. Najork

Conceptual-Level Log Analysis for the Evaluation of Web Application Quality ........................................
P. Fraternali, M. Matera, and A. Maurino

Designing Collaborative Virtual Environments Based on Real Spaces to Promote Community Interaction ........................................
L. Guerrero, C. Collazos, J. Pino, S. Ochoa, and F. Aguilera

Using Association Rules to Discover Search Engines Related Queries ........................................
B. Fonseca, P. Golgher, E. de Moura, and N. Ziviani

On the Image Content of the Chilean Web ........................................................................

Finding Buying Guides with a Web Carnivore ........................................................................
R. Kraft and R. Stata

Application Modeling for the Semantic Web ........................................................................
F. Lima and D. Schwabe

Towards an Ontology for Software Metrics and Indicators as the Foundation for a Cataloging Web System ........................................................................
M. Martin and L. Olsina

Estimating the Development Effort of Web Projects in Chile ........................................................
S. Ochoa, M. Bastarrica, and G. Parra

A Utility-Oriented Hyperlink Analysis Model for the Web ........................................................................
V. Plachouras, I. Ounis, and G. Amati

Multi-tier Architecture for Web Search Engines ........................................................................
K. Risvik, Y. Aasheim, and M. Lidal
A Semantic Matching Method for Clustering Traders in B2B Systems
\textit{R. Tomaz, S. Labidi, and B. Wanghon}

Quantitative Analysis of Strategies for Streaming Media Distribution

The Best Trail Algorithm for Assisted Navigation of Web Sites
\textit{R. Wheeldon and M. Levene}

\textbf{Alternate Tracks}

Collaborative Learning and Creative Writing
\textit{L. Guerrero, B. Mejías, C. Collazos, J. Pino, and S. Ochoa}

Does Home Internet Use Influence the Academic Performance of Low-income Children?
Finding from the HomeNetToo Project
\textit{L. Jackson, A. von Eye, and F. Biocca}

Syntactic Similarity of Web Documents
\textit{Á. Pereira Jr. and N. Ziviani}

\textbf{Posters}

Alternative Implementation Techniques for Web Text Visualization
\textit{O. Alonso and R. Baeza-Yates}

WISDNA: An Information Visualization Paradigm for XML
\textit{R. Baeza-Yates, R. Lemus, D. Ponceleon, and S. Srinivasan}

Cooperative Crawling
\textit{M. Buzzi}

Cooperation Schemes between a Web Server and a Web Search Engine
\textit{C. Castillo}

Finding Related Hubs and Authorities
\textit{P.-A. Chirita, D. Olmedilla, and W. Nejdl}

Structuring Information on the Web from Below: The Case of Educational Organizations in Chile
\textit{E. Krsulovic-Morales and C. Gutiérrez}

SharpSpider: Spidering the Web through Web Services
\textit{K. Moody and M. Palomino}

Towards an Information Filtering System in the Web Integrating Collaborative and Content Based Techniques
\textit{J. Pérez-Alcázar, M. Calderón- Benavides, and C. González-Caro}

Methodological Aspects in Designing Web-Based Collaborative Systems
\textit{J. Reyes and M. Moliner}

Clustering the Chilean Web
\textit{S. Virtanen}
TUTORIALS

XML Retrieval .................................................................................................................. R. Baeza-Yates
Website Usability or the WWW as Practice ................................................................. H. Breuer
Metadata in Web Information Services and Systems .............................................. E. Rodríguez
Network and Web Services Security Concepts Using Java ....................................... R. Srinivas
Web Accessibility, Mobility, and Findability ......................................................... B. White

Author Index ...................................................................................................................
The Center for Web Research of the Computer Science Department of the University of Chile, under the sponsorship of the International World Wide Web Conference Committee (IW3C2), the Brazilian Computer Society (SBC), the Chilean Computer Science Society (SCCC) and the Latin American Center for Informatics Studies (CLEI) was proud to organize the First Latin American World Wide Web Conference held on November 10-12, 2003, in Santiago, Chile.

International researchers, technologists, and leaders from academia, industry, and government gathered at LA-WEB to present, demonstrate, and discuss the latest developments of the Web and how they can be used to empower the Latin American Web.

All this was possible thanks to the support of the Department of Computer Science of the University of Chile, the Millennium Scientific Initiative of the Chilean Ministry of Planning (MIDEPLAN), the Chilean Fulbright Commission, and Sun Microsystems.

We would like to acknowledge the work of the different chairs: Daniel Schwabe, Jose Miguel Piquer, Nivio Ziviani, Luis Olsina, and Alfredo Sanchez. We also thank all the organizing committee, in particular the help of Cuauhtemoc Rivera-Loaiza.

Ricardo Baeza-Yates  
Conference Chair  
CWR/DCC/Universidad de Chile
On behalf of the Program Committee, we welcome you to the first Latin American Web Congress - LA Web 2003. Consistently with worldwide tendencies, the growth of the WWW in Latin America has been tremendous, with an estimated online population of roughly 50 million people in 2003. Research has also picked up significantly.

This conference is the first in a series aimed at divulging research results and experiences related to the WWW, within Latin America. We received a total of 62 submissions, of which 18 were accepted for the main tracks, 6 for alternate tracks, (three of them are not included here, because they were not in English) and 10 as posters. Of the main track submissions, 9 (50%) were from Latin America. The Program Committee itself is truly international, including recognized researchers and experts from 16 countries. The diversity of topics is also reflected in the accepted papers, ranging from search and data mining, web application engineering, e-commerce to mobility.

The invited speakers include Stefan Decker (Information Sciences Institute, University of Southern California, USA), Ramez Elmasri (The University of Texas at Arlington, USA), and Knut Magne Risvik (Fast Search and Transfer, Norway). In addition we received ten tutorial proposals, from where five were selected on the following topics: web usability (Henning Breuer, DCC/Universidad de Chile), web accessibility and mobility (Bebo White, Stanford Univ., USA), network and web services security (Raghavan Srinivas, Sun Microsystems, USA), metadata (Eva Mendez, Carlos III Univ., Spain), and XML retrieval (Ricardo Baeza-Yates, Univ. de Chile). We hope that you will find this a stimulating program, bringing awareness to research opportunities being pursued within Latin America, and worldwide.

Ricardo Baeza-Yates  
Daniel Schwabe  

Main Tracks Program Co-chairs  
Santiago, Chile & Rio de Janeiro, Brazil
CONFERENCE ORGANIZATION

CONFERENCE CHAIR
Ricardo Baeza-Yates, CWR/DCC/Universidad de Chile

MAIN TRACKS

PROGRAM COMMITTEE CO-CHAIRS
Ricardo Baeza-Yates, CWR/DCC/Universidad de Chile
Daniel Schwabe, PUC Rio de Janeiro, Brazil

PROGRAM COMMITTEE MEMBERS
Virgilio Almeida, UFMG, Brazil
Gerardo Ayala, UDLAP, Mexico
Krishna Bharat, Google, USA
Dick Buiterman, CWI, Netherlands
Tiziana Catarci, Univ. of Rome, Italy
Soumen Chakrabarti, IITB, India
Jim Challenger, IBM, USA
Stefan Decker, ISI, USA
Carlos delgado, Univ. Carlos III, Spain
Piero Fraternali, Politecnico di Milano, Italy
Martin Gaedke, Karlsruhe Univ., Germany
Lee Giles, Penn. State Univ., USA
David Hawking, CSIRO, Australia
Monika Henzinger, Google, USA
Geert-Jan Houben, Eindhoven Univ. of Technology, Netherlands
Nora Koch, Munich Univ., Germany
Balachander Krishnamurthy, AT&T, USA
Yoelle Maarek, IBM Haifa, Israel
Udi Manber, Amazon, USA
Heikki Mannila, Univ. of Helsinki, Finland
Massimo Melucci, Padova Univ., Italy
Alberto Mendelzon, Univ. of Toronto, Canada
Daniel Menasce, George Mason Univ., USA
Sung Hyon Myaeng, Information and Communication Univ., Korea
Erich J. Neuhold, FHG, Germany
Paolo Paolini, Politecnico di Milano, Italy
Oscar Pastor, UPV, Spain
Berthier Ribeiro-Neto, UFMG, Brazil
Knut Magne Risvik, Fast, Norway
Gustavo Rossi, UNLP, Argentina
Luiz Fernando Gomes Soares, PUC-Rio, Brazil
Bebo White, Stanford Univ., USA
Mary Ellen Zurko, IBM, USA
**Alternate Tracks**

**Program Committee Co-Chairs**
Jose Miguel Piquer, CWR/DCC/Universidad de Chile  
Nivio Ziviani, DCC, Univ. Federal of Minas Gerais, Brazil

**Program Committee Members**
Denis Caromel, INRIA, France  
Ulises Cortes, UPC, Spain  
Cristina Duarte Murta, UFPR, Brazil  
Dorgival Guedes, UFMG, Brazil  
Claudio Gutierrez, UChile, Chile  
Pedro Hepp, UFRO, Chile  
Carlos Hurtado, UChile, Chile  
Alberto H. F. Laender, UFMG, Brazil  
Antonio Alfredo F. Loureiro, UFMG, Brazil  
Marisa Lucena, PUC-Rio, Brazil  
Alberto Nogueira de Castro Jr., UFAM, Brazil  
Maria da Graca Pimentel, USP-SC, Brazil  
Jaime Sanchez, UChile, Chile  
Luis Sanchez, U Carlos III, Spain  
Altigran Soares da Silva, UFAM, Brazil  
Crediné Silva de Menezes, UFES, Brazil  
Edleno Silva de Moura, UFAM, Brazil  
Orivaldo de Lira Tavares, UFES, Brazil  
Rosa Maria Vicari, UFRGS, Brazil  
Hans Weghorn, University of Cooperative Education, Germany  
Wong Hao Chi, UFMG, Brazil

**Additional Reviewers**
Claudine Santos Badue, UFMG, Brazil  
Nelson Baloian, DCC/Universidad de Chile  
Alejandro Bassi, DCC/Universidad de Chile

**Posters**

**Program Committee Chair**
Luis Olsina, Univ. de La Pampa, Argentina.

**Program Committee Members**
Silvia Abrahaao, UPV, Spain  
Amalia Alvarez, Universidad ORT, Uruguay  
Ricardo Baeza-Yates, Universidad de Chile, Chile  
David Fuller, Pontificia Universidad de Chile, Chile  
Steve Lewontin, Nokia  
María de los Angeles Martin, UNLP, Argentina  
Maria da Graça Pimentel, USP SÃ£o Carlos, Brazil
TUTORIALS

PROGRAM COMMITTEE CHAIR
Alfredo Sanchez, UDLAP, Mexico

PROGRAM COMMITTEE MEMBERS
Ricardo Baeza-Yates, Universidad de Chile
Peter Nuernberg, Aalborg University Esbjerg
Cleotilde Gonzalez, Carnegie Mellon University, USA
Carlos Proal, Universidad de las Americas, Puebla
Oleg Starostenko, UDLA-Puebla, Mexico
Daniel Vallejo, UDLA-Puebla, Mexico

ORGANIZING COMMITTEE
Claudine Santos Badue, UFMG, Brazil
Ricardo Baeza-Yates, CWR/DCC/Universidad de Chile (Chair)
Magna Bornand, CWR/DCC/Universidad de Chile
Cuauhtemoc Rivera-Loaiza, CWR/DCC/Universidad de Chile
Margarita Serei, DCC/Universidad de Chile
Javier Velasco, CWR/DCC/Universidad de Chile

CONFERENCE PARTNERS
SCCC Chilean CS Society
CLEI Centro Latinoamericano de Estudios de Informática
SBC Sociedade Brasileira de Computacao

CONFERENCE SPONSORS
Chilean Fulbright Commission
Millennium Scientific Initiative of Mideplan
Sun Microsystems