

Irini FUNDULAKI

Curriculum Vitae

Personal Information

Information Systems Laboratory
Institute of Computer Science
N. Plastira 100
Vassilika Vouton
Heraklion, Crete, Greece

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Research Interests

Database Management and Information Systems for the World Wide Web: Provenance Models for RDF Data, Storage and Indexing Schemes for RDF Provenance, Storage, Indexing and Scalable RDF Query Processing, Access Control for RDF and XML Data, XML Full Text Search with a focus on Personalization, XML Data Integration, User Profile Data Management, Identity Management

Education

- **PhD: Diplôme de Docteur en Informatique** (January 2003)
Conservatoire National des Arts et Métiers Paris (C.N.A.M.),
Institut National de Recherche en Informatique et Automatique (I.N.R.I.A), France
Dissertation: "Querying and Integration of XML resources for Web Communities"
Grade: "High honorable degree" ("Mention très honorable")
Advisor: Prof. Michel Scholl (C.N.A.M., Paris, France)
Co-Advisors: Prof. Bernd Amann (LIP 6 - Université de Pierre et Marie Curie, Paris, France) and Prof. Catriel Beeri (The Hebrew University of Jerusalem, Israel)
- **M.Sc. in Computer Science** (March 1997)
Computer Science Department, University of Crete, Greece
Thesis: "A Diagnostic Support System for Engineering Applications"
Advisor: Prof. Panos Constantopoulos (University of Crete, Greece)
- **B.Sc. in Computer Science** (September 1994)
Computer Science Department, University of Crete, Greece

Honors and Awards

- **Postdoctoral Fellowship** (January 2003 - January 2004)
Institut National de Recherche en Informatique et Automatique (I.N.R.I.A)
- **Teaching and Research Position** (Attachée Temporaire d'Enseignement et de Recherche, French Ministry of Education) (September 2000 - August 2002)
- **PhD Fellowship** (November 1998 - August 2000)
Verso Group, Institut National de Recherche en Informatique et Automatique (I.N.R.I.A)
- **ERCIM fellowship** (May 1998 - October 1998)
Completed at the Verso Group, Institut National de Recherche en Informatique et Automatique (I.N.R.I.A)
- **Graduate Scholarship** (October 1994 - October 1996)
Institute of Computer Science, Foundation for Research and Technology-Hellas
- **Undergraduate Scholarship** (September 1992 - September 1994)
Institute of Computer Science, Foundation for Research and Technology-Hellas

Research Experience

- **Principal Researcher** (January 2010 – Present)
Information Systems Laboratory, Institute of Computer Science,
Foundation for Research and Technology-Hellas (FORTH)
- **Associate Researcher** (January 2008 – January 2010)
Information Systems Laboratory, Institute of Computer Science,
Foundation for Research and Technology-Hellas (FORTH)
- **Research Fellow** (February 2006 – January 2008)
Database Group, Laboratory for Foundations of Computer Science,
School of Informatics, University of Edinburgh, UK
Responsible: Prof. Peter Buneman
- **Member of Technical Staff** (June 2004 - January 2006)
Network Data and Services Research Department,
Bell Laboratories, Lucent Technologies, USA
Responsible: Rick Hull
- **Post Doc Employee** (February 2003 - May 2004)
Network Data and Services Research Department,
Bell Laboratories, Lucent Technologies, USA
Responsible: Rick Hull
- **Visitor** (November 2001)
Database Group,
The Hebrew University of Jerusalem, Israel
Responsible: Prof. Catriel Beeri
- **ERCIM Fellow** (May 1998 - October 1998)
Verso Group,
Institut National de Recherche en Informatique et Automatique (I.N.R.I.A), France
Responsible: Prof. Michel Scholl, Prof. Bernd Amann and Anne-Marie Vercoustre (Director
of Research at I.N.R.I.A. at the time)
- **Post-Graduate Employee** (November 1996 - April 1998)
Information Systems and Software Technology Division, Institute of Computer Science
Foundation for Research and Technology - Hellas (FORTH)
Responsible: Prof. Panos Constantopoulos, Prof. Vassilis Christophides and Dr. Martin
Dörr
- **M.Sc. Intern** (October 1994 - October 1996)
Information Systems and Software Technology Division, Institute of Computer Science
Foundation for Research and Technology-Hellas (FORTH)
Responsible: Prof. Panos Constantopoulos
- **B.Sc. Intern** (September 1992 - September 1994)
Information Systems and Software Technology Division, Institute of Computer Science
Foundation for Research and Technology-Hellas (FORTH)
Responsible: Prof. Panos Constantopoulos

Publications

Thesis

[T1] Irimi Fundulaki, “**Querying and Integration of XML resources for Web Communities**”
Conservatoire National des Arts et Métiers, Paris, France, 2003.

Journal Publications

[J1] Yannis Theoharis, Irimi Fundulaki, Grigoris Karvounarakis, and Vassilis Christophides.
On Provenance of Queries on Linked Web Data. To appear in IEEE Internet Computing:
Jan/Feb 2011 - Provenance in Web Applications.

[J2] Bernd Amann, Catriel Beerli, Iri Fundulaki, and Michel Scholl. *Interrogation de Ressources XML Concernant un domaine d'intérêt*. *Technique et Science Informatiques (TSI)*. Vol. 22(10):1243–1270, 2003.

[J3] Bernd Amann, Iri Fundulaki, and Michel Scholl. *Integrating ontologies and thesauri for RDF schema creation and metadata querying*. *Int'l Journal of Digital Libraries*, 3(3):221–236, October 2000.

Peer-Reviewed Conference Papers

[C1] Giorgos Flouris, Iri Fundulaki, Maria Michou, Grigoris Antoniou. *Controlling Access to RDF Graphs*. In Proc. of the 2nd Future Internet Symposium (FIS), Berlin, Germany, September 2010.

[C2] Giorgos Flouris, Iri Fundulaki, Panagiotis Padiaditis, Yannis Theoharis and Vassilis Christophides. *Coloring RDF Triples to Capture Provenance*. In Proc. of the 8th Int'l Semantic Web Conference (ISWC), Washington DC, October 2009. Appeared also in Informal Proc. Hellenic Data Management Symposium, September 2009, Athens, Greece.

[C3] Vicky Papavassiliou, Giorgos Flouris, Iri Fundulaki, Dimitris Kotzinos and Vassilis Christophides. *On Detecting High Level Changes in RDF/S KBs*. In Proc. of the 8th Int'l Semantic Web Conference (ISWC), Washington DC, October 2009. (*Best Student Paper Award*).

[C4] Loreto Bravo, James Cheney and Iri Fundulaki. *Repairing Inconsistent Write-Access Control Policies*. In Proc. of the 11th Int'l Symposium on Database Programming Languages (DBPL), Vienna, Austria, September 2007.

[C5] Iri Fundulaki and Sebastian Maneth. *Formalizing XML access control for update operations*. In Proc. of the 12th ACM Symposium on Access Control Models and Technologies (SACMAT), Sophia Antipolis, France, June 2007.

[C6] Sihem Amer-Yahia, Iri Fundulaki and Laks V. Lakshmanan. *Personalizing XML Search in PimenTo*. In Proc. of the 23rd Int'l Conf. on Data Engineering (ICDE), Istanbul, Turkey, April 2007.

[C7] Michael Benedikt and Iri Fundulaki. *XML Subtree Queries: Specification and Composition*. In Proc. of the 10th Int'l Symposium on Database Programming Languages (DBPL), Trondheim, Norway, September 2005.

[C8] Arnaud Sahuguet, Bogdan Alexe, Iri Fundulaki, Pierre-Yves Laligand, Abdullatif Shifka, and Antoine Arnail. *User Profile Management in Converged Networks (Episode II): "Share your data, keep your secrets"*. In Proc. of the Second Biennial Conf. on Innovative Data Systems Research (CIDR), Asilomar, California, USA, January 2005.

[C9] Iri Fundulaki and Maarten Marx. *Specifying Access Control Policies for XML Documents with XPath*. In Proc. of the 9th ACM Symposium on Access Control Models and Technologies (SACMAT), Yorktown Heights, New York, USA, June 2004.

[C10] Bernd Amann, Catriel Beerli, Iri Fundulaki, and Michel Scholl. *Querying XML Sources Using an Ontology-Based Mediator*. In Proc. of the Confederated Int'l Conf. DOA, CoopIS and ODBASE, Irvine, California, USA, November 2002. Appeared also in the Informal Proc. of the 18ⁱemes Journées Bases de Données Avancées (BDA), Paris, France, October 2002.

[C11] Bernd Amann, Catriel Beerli, Iri Fundulaki, and Michel Scholl. *Ontology-based Integration of XML Web Resources*. In Proc. of the 1st Int'l Conf. on the Semantic Web (ISWC), Sardinia, Italy, June 2002.

[C12] Bernd Amann and Iriini Fundulaki. *Integrating Ontologies and Thesauri to Build RDF Schemas*. In Proc. of the 3rd European Conf. on Research and Advanced Technology for Digital Libraries (ECDL), Paris, France, September 1999.

[C13] Martin Dörr and Iriini Fundulaki. *SIS-TMS, A Thesaurus Management System for Distributed Digital Collections*. In Proc. of the 2nd European Conf. on Research and Advanced Technology for Digital Libraries (ECDL), Crete, Greece, September 1998.

[C14] Vassilis Christophides, Martin Dörr, and Iriini Fundulaki. *The specialist seeks expert views: Managing digital folders in the AQUARELLE project*. In *Museums and the Web 1997: Selected Papers*.

[C15] Vassilis Christophides, Martin Dörr, and Iriini Fundulaki. *A Semantic Network Approach to Semi-Structured Documents Repositories*. In Proc. of the 1st European Conf. on Research and Advanced Technology for Digital Libraries (ECDL), Pisa, Italy, September 1997.

Peer-Reviewed Workshop Papers

[W1] Lazaros Koromilas, George Chinis, Iriini Fundulaki, Sotiris Ioannidis: *Controlling Access to XML Documents over XML Native and Relational Databases*. In Proc. of the 6th Secure Data Management VLDB Workshop, Nancy, France, August 2009.

[W2] Panagiotis Pediaditis, Giorgos Flouris, Iriini Fundulaki and Vassilis Christophides. *On Explicit Provenance Management in RDF/S Graphs*. In Proc. of the 1st Workshop on the Theory and Practice of Provenance, San Francisco, CA, USA, Proceedings USENIX, February 2009.

[W3] Iriini Fundulaki and Maarten Marx. *Mediation of XML data through Entity-Relationship Models*. In Proc. of the 1st Int'l Workshop on Semantic Web and Databases (SWDB), Berlin, Germany, September 2003 (in conjunction with the 29th Int'l Conf. on Very Large Data Bases (VLDB)).

[W4] Bernd Amann, Catriel Beerli, Iriini Fundulaki, Michel Scholl, and Anne-Marie Vercoustre. *Mapping XML Fragments to Community Web Ontologies*. In Proc. of the Fourth Int'l Workshop on Web and Databases (WebDB), St. Barbara, California, USA, May 2001 (in conjunction with the ACM Int'l Conf. on Management of Data (SIGMOD)).

[W5] Sofia Alexaki, Vassilis Christophides, Greg Karvounarakis, Dimitris Plexousakis, Karsten Tolle, Bernd Amann, Iriini Fundulaki, Michel Scholl, and Anne Marie Vercoustre. *Managing RDF Metadata for Community Webs*. In Proc. of the 2nd Int'l Workshop on The World Wide Web and Conceptual Modelling, Salt Lake City, Utah, USA, October 2000 (in conjunction with the 19th Int'l Conf. on Conceptual Modeling (ER)).

Peer-Reviewed Demonstration Papers/Posters

[D1] Giorgos Flouris, Iriini Fundulaki, Maria Michou and Grigoris Antoniou. *Access Control for RDF Data: Experimental Results*. In Proc. of the 2nd Future Internet Symposium, Berlin, Germany, September 2010.

[D2] Loreto Bravo, James Cheney and Iriini Fundulaki. *ACCON: checking consistency of XML write-access control policies*. In Proc. of the 11th Int'l Conf. in Extending Database Technology (EDBT), Nancy, France, March 2008.

[D3] Sihem Amer-Yahia, Iriini Fundulaki, Prateek Jain and Laks Lakshmanan. *Personalizing XML Text Search in Piment*. In Proc. of the 31st Int'l Conf. on Very Large Data Bases (VLDB), Trondheim, Norway, September 2005.

[D4] Serge Abiteboul, Bogdan Alexe, Omar Benjelloun, Bogdan Cautis, Iriini Fundulaki, Tova

Milo, and Arnaud Sahuguet. *An Electronic Patient Record "on Steroids": Distributed, Peer-to-Peer, Secure and Privacy conscious*. In Proc. of the 30th Int'l Conf. on Very Large Data Bases (VLDB), Toronto, Canada, September 2004.

[D5] Irimi Fundulaki, Guillaume Giraud, Daniel Lieuwen, Nicola Onose, Nicolas Pombourq, and Arnaud Sahuguet. *Share your data, keep your secrets*. In Proc. of the ACM Int'l Conf. on Management of Data (SIGMOD), Paris, France, June 2004.

[D6] Irimi Fundulaki, Bernd Amann, Catriel Beerli, and Michel Scholl. *STYX: Connecting the XML World to the World of Semantics*. In Proc. of the 8th Int'l Conf. on Extending Database Technology (EDBT), Prague, Czech Republic, March 2002.

Peer-Reviewed Tutorials

[TU1] Irimi Fundulaki, Rick Hull, Bharat Kumar, Daniel Lieuwen, and Arnaud Sahuguet. *My Personal Web: A Seminar on Personalization and Privacy for Web and Converged Services*. In Proc. of the 20th Int'l Conf. on Data and Knowledge Engineering (ICDE), Boston, Massachusetts, USA, March 2004.

[TU2] Chris Clifton, Irimi Fundulaki, Rick Hull, Bharat Kumar, Daniel Lieuwen, and Arnaud Sahuguet. *Privacy-Enhanced Data Management for Next Generation e-Commerce*. In Proc. of the 29th Int'l Conf. on Very Large Data Bases (VLDB), Berlin, Germany, September 2003 (co presented with Arnaud Sahuguet).

Peer-Reviewed National Conferences

[NC1] Giorgos Flouris, Irimi Fundulaki, Yannis Theoharis, Panagiotis Pediaditis, and Vassilis Christophides. *Coloring RDF Triples to Capture Provenance*. In Informal Proc. Hellenic Data Management Symposium, September 2009, Athens, Greece.

[NC2] Yannis Theoharis, Irimi Fundulaki, Grigoris Karvounarakis and Vassilis Christophides. *On Provenance of Queries on Web Data*. In Informal Proc. Hellenic Data Management Symposium, Agia Napa, Cyprus, June 2010.

[NC3] Peter Buneman, James Cheney, Carwyn Edwards and Irimi Fundulaki. *Preserving Scientific Data with XMLArch*. In Proc. of the 5th e-Science All Hands Meeting, Nottingham, UK, September 2006.

[NC4] Wenfei Fan, Irimi Fundulaki, Floris Geerts, Xibei Jia and Anastasios Kementsietsidis. *A View Based Security Framework for XML*. In Proc. of the 5th e-Science All Hands Meeting, Nottingham, UK, September 2006.

[NC5] Bernd Amann, Catriel Beerli, Irimi Fundulaki, Michel Scholl, and Anne-Marie Vercoustre. *Rewriting and Evaluating Tree Queries with XPath*. In Informal Proc. of the 17i`emes Journées Bases de Données Avancées (BDA), Agadir, Maroc, November 2001.

Articles

[A1] Irimi Fundulaki, Neoklis Polyzotis: Report on the 9th Int'l Workshop on Web Information and Data Management (WIDM 2007). SIGIR Forum 42(1): 36-43 (2008)

[A2] Irimi Fundulaki, Neoklis Polyzotis: Report on the 9th Int'l Workshop on Web Information and Data Management (WIDM 2007). SIGMOD Record 37(3): 50-52 (2008)

[A3] Bernd Amann, Vassilis Christophides, Irimi Fundulaki, Michel Scholl and Anne-Marie Vercoustre. *Intelligent Mediation of Cultural Information Sources*. In ERCIM News, No. 35, October 1998.

[A4] Vassilis Christophides, Martin Dörr and Iridi Fundulaki. *The Aquarelle Folder Server*. In ERCIM News, No. 33, April 1998.

[A5] Martin Doerr and Iridi Fundulaki. *The Aquarelle Terminology Service*. In ERCIM News, No 33, April 1998.

Non Peer-Reviewed Technical Reports

[TR1] Yannis Theoharis, Iridi Fundulaki, Grigoris Karvounarakis, Vassilis Christophides. *On Provenance of Queries on Linked Web Data*, 2010, Technical Report FORTH/ICS 406, June 2010.

[TR2] Vasiliki Papavasiliou, Giorgos Flouris, Iridi Fundulaki, Dimitris Kotzinos, Vassilis Christophides. *Formalizing High-Level Change Detection for RDF/S KBs*, 2009, Technical Report FORTH-ICS/TR-398, August 2009.

[TR3] Loreto Bravo, James Cheney and Iridi Fundulaki: *Repairing Inconsistent XML Write-Access Control Policies*. CoRR abs/0708.2076: (2007)

[TR4] Iridi Fundulaki and Avinash Vyas. *Architectural approaches for blending Data Integration and Identity Management*. Bell Labs Internal Technical Report, December 2004.

Professional Service

- **Chair:**
 - **Undergraduate Research Program Competition Chair, SIGMOD 2011**
 - **Program Chair, Int'l Workshop on Web Information and Data Management (WIDM), 2007** (with Neoklis Polyzotis, University of California, Santa Cruz, USA)
 - **Program Chair, Int'l Workshop on Web Information and Data Management (WIDM), 2006** (with Angela Bonifati, ICAR-CNR, Italy)
- **Editor**
 - **2nd Int'l Workshop on Semantic Web and Databases (SWDB) 2004**, <http://swdb.semanticweb.org/> with Christoph Bussler and Val Tannen. Proceedings published by the Lecture Notes in Computer Science (LNCS) Series, Springer-Verlag.
- **Program Committee Member**
 - ESWC, Semantic Data Management Track 2011
 - ACM SIGMOD 2011
 - EDBT 2012, 2011, 2010
 - Management of Emergent Digital EcoSystems (MEDES), 2009
 - CIKM 2007, 2006, 2011
 - IEEE International Conference on e-Business Engineering (ICEBE) 2010, 2009
 - IEEE ICDE 2010 (Demonstration Track)
 - VLDB 2009, 2007 (Demonstration Track)
 - ACM SIGMOD 2005 (Demonstration Track)
 - Web-Age Information Management (WAIM) 2005
 - DEXA 2004
 - Conférence en Recherche d'Informations et Applications (CORIA) 2007, 2006
- **Program Committee Member (Workshops & Symposiums)**
 - Third Int'l Workshop on the Theory and Practice of Provenance (TaPP) 2011
 - Workshop on the role of Semantic Web in Provenance Management (SWPM), 2010, 2011

- Data Engineering Meets the Semantic Web Workshop (DESWeb) 2010
- PhD Workshop @ ICDE, 2010, 2009
- IDAR PhD Workshop@SIGMOD, 2009
- Int'l XML Database Symposium (XSym), 2009, 2006, 2003
- Workshop on Personalized Access, Profile Management, and Context Awareness in Databases (PersDB) 2010, 2009, 2008
- Workshop on Database Technologies for Handling XML Information on the Web (DataX) 2009, 2008
- Int'l Workshop on Web and Databases (WebDB) 2007
- Int'l Workshop on Semantic Web and Databases (SWDB) 2004
- ACM Int'l Workshop on Web Information and Data Management (WIDM) 2009, 2008, 2005
- **Journal Reviewer**
 - Journal of Web Semantics (JWS) 2010, 2009, 2008, 2005
 - Health Informatics Journal (HIJ) 2009
 - Int'l Journal of Semantic Web and Information Systems 2008
 - Int'l Journal on Very Large Databases 2010, 2007
 - ACM Transactions on Database Systems (TODS) 2010, 2005
 - IEEE Transactions on Knowledge and Data Engineering (TKDE) 2006, 2005, 2004, 2002)
 - Knowledge and Information Systems (KAIS) 2006
- **External Reviewer**
 - ER 2010
 - ECDL 2008
 - WWW 2007
 - VLDB 2006
 - EDBT-Workshop on Database Technologies for Handling XML Information on the Web (Data-X) 2006
 - Programming Language Technologies for XML (Plan-X) 2005
 - Int'l Workshop on Web and Databases (WebDB) 2005
 - ACM SIGMOD 2007, 2004, 2001
 - IEEE ICDE, 2000
 - CIKM, 1999
- **Head of the W3C Greece Office, January 2009 - present**
<http://www.w3c.gr>

“The goal of the W3C Greece Office is to inform the Greek organizations and other interested parties in general, about the evolvments related to cutting-edge technologies of the World Wide Web, as well as to promote the adoption of W3C standards by the programmers, the application developers and standard setters. Greek organizations and institutions are informed about the activities of W3C through the website of the W3C Greece Office (www.w3c.gr), the main vehicle for communication with the Office’s community which is frequently updated with W3C News and Press Releases translated in Greek, as well as with the translations (in Greek) of W3C recommendations.”
- **Member of the W3C Provenance Incubator Group, September 2009 - December 2010**
<http://www.w3.org/2005/Incubator/prov/charter>

“The goal of this incubator group is to provide a state-of-the art understanding and develop a roadmap in the area of provenance for Semantic Web technologies, development, and possible standardization.”

2010-2014: PlanetData, European Network of Excellence, Funded by the European Commission, Total Budget: 3.723.387EUR, FORTH Budget: 328.592EUR (Irina Fundulaki, Workpackage Leader, Grigoris Antoniou, PI).

Courses Created/Co-Taught

- **University of Crete, Greece:**
 - **Co-Instructor** (with Prof. Vassilis Christophides):
CS561: Web Data Management, Graduate Course, Spring 2010, 2009
 - **Instructor:**
CS561: Web Data Management, Graduate Course, Spring 2008.
 - **Teaching Assistant:**
 - Information Systems, Graduate Course, Spring 1995, 1996
Responsible: Prof. Panos Constantopoulos
 - Database Systems, Undergraduate Course, Winter 1994
Responsible: Prof. Sarantos Kapidakis

- **Institut d'Informatique d'Enterprise (IIE-CNAM), Paris, France**
 - **Instructor:**
Seminars on XML and related technologies, Graduate Level, Spring 2001
 - **Teaching Assistant:**
 - Advanced Database Systems, Undergraduate Level, Spring 2001.
Responsible: Prof. Mireille Jouve
 - Database Systems, Undergraduate Level, Winter and Spring 2000.
Responsible: Prof. Mireille Jouve
 - Automated Information Systems, Undergraduate Level, Winter 2000.
Responsible: Profs. A. Cabanes and X. Castellani

- **Conservatoire National des Arts et Métiers Paris (C.N.A.M.), France**
 - **Teaching Assistant:**
 - **Database Systems Course**, Winter 2001, Spring 2001, Spring 2000.
Responsible: Profs. Bernd Amann, Michel Scholl, and Dan Vodislav

Student Supervision

- **University of Crete, Greece (Master Thesis Projects)**
 - September 2008 – present (with V. Christophides)
Petros Tsialiamanis: *Optimized SPARQL Query Translation for Column-based DBMS*
 - September 2008 – December 2009 (with V. Christophides)
Vicky Papavassiliou: *On Detecting High Level Changes in RDF/S KBs*
 - February 2008 – December 2008 (with V. Christophides)
Panagiotis Pediaditis: *Querying and Updating RDF/S Named Graphs*
- **University of Crete, Greece (Undergraduate Thesis Projects)**
 - Spring 2008
Stella Charmpa: *Design and Implementation of a User Interface for the Management of User Preferences in PIMENTO*
 - Winter & Spring 2008
Irina Genitsaridi: *Constructing the Canonical Model of a Mediator Schema using a Tableau*
 - Winter & Spring 2009
Sofia Kleisarhaki: *Efficient typing of RDF Graphs in the presence of updates*
 - Winter & Spring 2009 (with S. Ioannidis)

- ***Bell Laboratories, Lucent Technologies (Undergraduate Thesis Projects/Diploma Thesis)***
 - Spring 2005
Prateek Jain, Indian Institute of Technology (IIT) Kanpur, Kanpur, India.
 - Spring 2004
Bogdan Alexe, École Polytechnique, Paris, France and Polytechnic University of Bucarest, Romania.
 - Spring 2003 (with Arnaud Sahuguet)
Guillaume Giraud, Nicola Onose and Nicolas Pombourq, École Polytechnique, Paris, France. Nicolas Pombourq and Guillaume Giraud received the first price of their class for their work (out of 60 students)
- ***Conservatoire National des Arts et Métiers Paris (C.N.A.M.) (Undergraduate Thesis Projects/Diploma Thesis)***
 - Spring 2000 (with B. Amann)
Stephane Radicevic: *Interfaces for conceptual schemas resulting from the integration of ontologies and thesauri*
- ***Conservatoire National des Arts et Métiers Paris (C.N.A.M.) (Master Thesis)***
 - Spring 2000 (with M. Schöll and B. Amann)
Sandrine Lafois, SIR PE-CNAM-TELECOM, 'Ecole doctorale EDITE.
"Implementation and comparison of data structures for the querying of voluminous hierarchies"

References

Available upon Request

Research Projects

Bell Labs, Lucent Technologies

Incognito (June 2005 - January 2006)

(Joint work with Michael Benedikt and Bharat Kumar)

The objective of Incognito was to provide a platform to support context-aware, personalized and efficient access control for XML data. The basic idea behind Incognito was to perform access control by query rewriting instead of materialization. Incognito goes beyond the state-of-the-art approaches in XML access control: Incognito's access control rules are XML subtree queries [C7], defined per-user or group basis and the conditions under which the rules are applicable include dynamic context information of both the requestor and the requestee (such as time-of-day, day-of-the-week, user's location etc.). In Incognito we combined two technologies: the composition algorithms of the XML subtree query language [C7] to rewrite the initial user query into an authorized query by composing the incoming user query with the user profile's access control rules, and Vortex, a highly efficient rules engine developed in Bell Labs and used in a series of Lucent products, to decide in a highly efficient manner whether an access control rule is relevant to a user query.

GUPster (February 2003-September 2004)

(Joint work with Arnaud Sahuguet and Daniel Liewen)

The GUPster system aimed at providing privacy-conscious management of distributed user-profile data. The main idea behind GUPster was to build an XML-based mediator that acts as a centralized meta-data manager to handle highly distributed user profile XML data. The mediator acts as the single point of access between data producers and data consumers. GUPster aims to be the broker for user profile components which are (a) distributed across networks and (b) their distribution varies on a per user basis. Its role is two-fold: data integration and access control. This is the major difference with traditional mediator-based systems that only address the former. GUPster used an XML mediator-based architecture where: (a) the mediator's backbone is an XML schema agreed upon by standard bodies¹; (b) the user profile document is distributed across disparate data and network sources; and (c) the access control rules are defined in terms of the XML schema and specify who can access what part of the user profile document. The outcome of this work was a prototype system that was shown to Bell Labs and Lucent Business Units and demonstrated to several Lucent customers. This work was presented in [C8], [D4] and [D5]. In the context of this project, we also examined different approaches for identity management. This issue is particularly important in environments where a user can use different identities in order to access her data. The outcome of this work is presented in [TR4].

Conservatoire National des Arts et Métiers Paris (C.N.A.M.), Group Vertigo, Cedric Laboratory and Institut National de Recherche en Informatique et Automatique (I.N.R.I.A), France.

Project Community Webs (C-Web) (European Project) (September 1999-September 2000)

C-Web was a European project, defined in the 5th Framework. The principal partners were ERCIM² and EDW³. The concerned ERCIM organizers were: INRIA (projects: Verso and Acacia) and ICS-FORTH (Information Systems and Software Technology Division). The objective of the C-Web project was to provide a generic and open platform for describing, organizing and querying various XML resources. A C-Web is a distributed warehouse of XML resources that are used by a given community that shares the knowledge of a specific domain. The backbone of a C-Web is an RDF schema shared by the C-Web users and defined by the integration of extensive taxonomies of terms and ontologies following the methodology presented in [J2][J3][C12]. This schema captured the basic notions and relationships of the domain of interest and was used for expressing the semantics of the available sources. A description of this work can be found in [A3]. C-Web was one of the first projects to deal with research issues concerning the Semantic Web.

Inventaire (September 1999-September 2000) (Contract between the Conservatoire National des Arts et Métiers-Paris and the French Ministry of Culture)

The objective of this project was the development of a methodology and the necessary tools for the exchange and integration of documents describing cultural artifacts. The archaeologists from the French Ministry of Culture were using terms from the MERIMEE thesaurus⁴ to describe cultural artifacts. The users were able to query the descriptions of the artifacts using the terms from MERIMEE, but were unable to perform structured searches that would allow them to explore relations other than the ones provided by the thesauri. The idea was to integrate the CIDOC/ICOM ontology⁵ with the MERIMEE thesaurus following

¹ 3GPP GUP: The Third Generation Partnership Project (<http://www.3gpp.org>) in the telecommunications domain and Liberty Alliance (<http://www.projectliberty.org>)

² <http://www.ercim.org>

³ <http://www.edw-international.com/>

⁴ MERIMEE Thesaurus: <http://www.culture.gouv.fr/documentation/merimee/accueil.htm>

⁵ CIDOC/ICOM: <http://www.cidoc.icom.org/>

the framework discussed in [J2][J3][C12]. This rich schema allowed the users to provide more structured descriptions of the cultural artifacts.

In this project we realized the following two prototypes: in the first, we constructed a knowledge base by integrating an ontology (a conceptual schema defined independently of the schemas of the underlying sources) with structured vocabularies (thesauri), supplied by the Service de l'Inventaire. The second prototype was an extension of the first with the functionalities of description and querying of the documents of the Inventaire. More specifically, the knowledge base established in the first prototype is used in order to describe the contents of different documents in a precise way (using the terms of the chosen thesaurus) facilitating the exchange of documents without the detailed knowledge of their structure.

Institute of Computer Science, Foundation for Research and Technology (ICS-FORTH), Greece

European Project "AQUARELLE" (Participant ICS-FORTH)

(November 1996 - April 1998)

(Responsible: Prof. Panos Constantopoulos, Prof. Vassilis Christophides and Dr. Martin Dörr)

The Aquarelle project aimed at designing and developing a distributed multimedia information system, offering access to information describing cultural heritage. The main objective of the Aquarelle project was to make cultural information available to a large community of users by: "providing a uniform access to heterogeneous distributed databases and collections of data, linking and commenting pieces of information belonging to different databases and, offering multilingual terminology support." The basic tasks in the Aquarelle project involved i) the design and implementation of the conceptual model for the representation and the generic storage of SGML documents using the Semantic Index System (SIS) developed at ICS-FORTH and ii) the design and implementation of an Application Programming Interface (API) in C that provided the functionalities of acquisition and update of SGML documents stored in the SIS Knowledge Base. Results of this work were presented in [C14][C15]. Descriptions of the Aquarelle Project can be found in [A4], [A5].

SIS-Thesaurus Management System (SIS-TMS) (November 1996 - April 1998)

(Responsible: Dr. Martin Dörr)

The availability of central reference information as thesauri is critical for correct intellectual access to distributed databases, in particular to digital collections in international networks. There is a continuous raise of interest in thesauri, and several thesaurus management systems have appeared on the market. SIS-TMS is a thesaurus management system built on top of the Semantic Index System of ICS-FORTH and provides the necessary tools for the management of monolingual and multi-lingual thesauri. SIS-TMS eventually became an ICS-FORTH product. Later versions of SIS-TMS have been purchased by (a) the French Ministry of Culture (Direction de Patrimoine), (b) the Royal Commission of Historical Monuments of England, (c) the Museum Documentation Association and (d) the "Istituto Centrale per il Catalogo e la Documentazione" of the Italian Ministry of Culture. Results of this work were presented in [C13].

Languages: English (Fluent), French (Fluent), Greek (native Speaker).

Citizenship: Greek (by birth).