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EDUCATION

1990-1994 **Ph.D. in Computer Science**
Michigan State University, USA
Ph.D. Dissertation Topic: Reasoning with contradictory deductive databases
GPA: 3.96/4.00

1988-1990 **M.S. in Computer Science**
Michigan State University, USA
GPA: 3.96/4.00

1984-1988 **Ptychion in Mathematics (4 years university study)**
University of Athens, Greece
GPA: 9.40/10.00

UNIVERSITY EXPERIENCE

9/96-8/98 Visiting professor, Department of Computer Science,
University of Crete

8/95-8/2000 Associated researcher on the scientific area of Information Systems, Institute of Computer Science, Foundation for Research and Technology - Hellas

9/2000-today Principal researcher on the scientific area of Information Systems, Institute of Computer Science, Foundation for Research and Technology - Hellas

9/94-8/95 Visiting professor, Department of Electronic and Computer Engineering, Technical University of Crete

RESEARCH INTERESTS

My current interests include reasoning on the Semantic Web, modular web rule bases, non-monotonic-reasoning, faceted metadata and semantics, conceptual modelling, contextual organization of information, information integration and retrieval systems for the web, interoperability of heterogeneous and distributed information bases, and biomedical information systems.

RESEARCH RECORD

Reasoning On the Semantic Web

In this work, we extend RDF graphs with weak and strong negation, as well as derivation rules. The ERDF stable model semantics of the extended framework (Extended RDF) is defined, extending RDF(S) semantics. A distinctive feature of our theory, which is based on Partial Logic, is that both truth and falsity extensions of properties and classes are considered, allowing for truth value gaps. Our framework supports both closed-world and open-world reasoning through the explicit representation of the particular closed-world assumptions and the ERDF ontological categories of total properties and total classes. The complexity of the proposed language has been studied both for the general case and the various subcases. Additionally, we propose a framework of modular ERDF ontologies and define its semantics extending the ERDF stable model semantics.

Modular Web Rule Bases

We present a principled framework for modular web rule bases, called MWeb. According to this framework, each predicate defined in a rule base is characterized by its defining reasoning mode, scope, and exporting rule base list. Each predicate used in a rule base is characterized by its requesting reasoning mode and importing rule base list. For legal MWeb modular rule bases S the MWebAS and MWebWFS semantics of each rule base s in S w.r.t. S are defined model-theoretically. These semantics extend the answer set semantics (AS) and the well-founded semantics with explicit negation WFSX on ELPs, respectively, keeping all of their semantical and computational characteristics. Our framework supports: (i) local semantics and different points of view, (ii) local closed-world and open-world assumptions, (iii) scoped negation-as-failure, (iv) restricted propagation of local inconsistencies, and (v) monotonicity of reasoning, for ``fully shared'' predicates.

Faceted Metadata and Semantics

A faceted taxonomy has several advantages over a single hierarchy of terms, including conceptual clarity, compactness, and scalability. A drawback, however, is the cost of avoiding invalid combinations, i.e. compound terms that do not apply to any object in the domain. This need arises in both indexing and retrieval, and typically involves human effort for specifying the valid compound terms one by one. We propose a taxonomy algebra, called Compound Term Composition Algebra (CTCA) that can be used to generate the valid compound terms in a given faceted taxonomy in an efficient and flexible manner. It works on the basis of the original simple terms of the facets and a small set of positive and/or negative statements. In each algebraic operation, we adopt a closed-world assumption with respect to the declared positive or negative statements. The model-theoretic semantics of the algebra are formally defined. We also show that our algebra cannot be represented in Description Logics. The taxonomy algebra can be exploited in dynamically generating navigation trees whose nodes correspond to valid compound terms, only. Additionally, we provided specific mining algorithms which can be used to express the valid compound term of a materialized faceted taxomony in the form of a CTCA expression.

Biomedical Informatics

The "Prognochip" project (2003-2006) aims at: (i) the intelligent processing of microarray data, (ii) the classification of breast cancer profiles, (iii) the identification of candidate molecular markers, and (iv) the delivery of an Integrated Clinico-Genomics Environment to support the vision of individualized-medicine. Under the guidance of Prof. Dimitris Plexousakis and mine, we developed: (i) a Genomic Information System to manage the

specifications of the respective DNA microarray experiments (i.e., microarray design, hybridizations, etc.), analyze the raw hybridization data, and store the samples' gene expression profiles, and (ii) a middleware layer, called PrognoChip Mediator, that enables the seamless and efficient extraction of data from the various clinical and genomic sources.

Contexts in Information Bases

Our research in this area concerns the development of a general theory of contexts in information bases, and includes (i) the introduction of a novel structure for the representation of contexts, (ii) the development of a naming scheme based on contexts, (iii) the definition of operations between contexts, such as union, intersection, and difference operation, and (iv) the definition of a high-level query and update language for contexts.
The notion of context appears in several disciplines, including computer science, under various forms. However, all these forms are very diverse and serve different purposes. We present a general framework for representing the notion of context in information modeling. First, we present a simple definition whereby a context is seen as a set of objects, within which each object has a set of names and possibly a reference: the reference of the object is another context which "hides" detailed information about the object. Then, we enhance our simple notion of context by structuring its contents through the traditional abstraction mechanisms, i.e. classification, generalization, and attribution. We show that, depending on the application, our notion of context can be used either as an alternative way of modeling or as a complement of the traditional abstraction mechanisms. We also study the interactions between contextualization and the traditional abstraction mechanisms, as well as the constraints that govern such interactions. Finally, we present a theory for contextualized information bases. The theory includes a set of core axioms that are inherent to our theory, as well as a set of information model axioms that support embedding of particular information models into our contextualization framework.

Knowledge Representation and Reasoning

My research in this area focuses on (i) the development of knowledge representation models that support the representation of complex, evolving, heterogeneous, and abstract concepts and processes, (ii) methodologies for conceptual model design, (iii) the formalization of knowledge representation models, and (iv) the development and formalization of semantic structures that support reasoning not only at the instance, but also at the schema level.

The goal of semantic data modelling is to enable the database designer to naturally and directly incorporate as much as possible of the meaning of an application environment into its data model. However, a semantic data model should not only be characterized in terms of its representational adequacy but also in terms of the inferences it supports. Yet, little effort has been devoted to mechanisms for schema derivations and schema verification. To satisfy this need, we propose (i) structures that carry expressive and useful information on the database schema, (ii) a set of inference rules for schema derivations, and (iii) a mechanism for discovering contradictory schema declarations.

Thesauri

My research in this area focuses on (i) representation structures for thesauri based on our theory of context, and the advantages of this representation, (ii) the description of complex concepts based on combination of simple thesaurus descriptors, and (iii) the inter-relation of thesauri, and the transformation of a concept expression from one thesaurus to the closest concept expression in another thesaurus, based on a similarity measure

Logic Programming and Deductive Databases

A deductive database consists of two parts: a set of known facts, and a set of rules from which new facts can be derived. The goal of this research is to derive useful information from a set of contradictory rules. Consistency of derived facts is not a realistic assumption in many applications. In the presence of contradiction, classical logic fails to give any semantics to the deductive database. Thus, even a single erroneous datum could destroy all meaningful information.

In the investigated framework, rules are equipped with a partial order expressing their relative reliability in case of conflict. This reliability order is used to choose between conflicting rules. When no choice is possible, the conflicting rules are considered unreliable and their conclusions are blocked. Conclusions from rules unrelated to the contradiction are considered reliable and they are used for the derivation of new information.

Distributed Multimedia Database Systems

Multimedia database systems deal with the storage, manipulation, and retrieval of multiple media types (pictures, voice, video, graphics, text). My interests in this area include: (i) development of multimedia interpretation models describing the content of multimedia data for content-based retrieval, (ii) development of multimedia description models supporting multimedia data presentation and synchronization, (iii) query languages and navigation methods for multimedia data, and (iv) client-server architectures supporting remote request for delay-sensitive data, such as video.

Data Structures and Files, Main-Memory Databases

We have proposed multi-directory hashing techniques for fast search in main memory databases. Additionally, we have analyzed the performance of a multi-directory hashing technique for disk-based databases. This technique achieves improved bucket utilization and is suitable for parallel search.

PARTICIPATION IN RESEARCH PROJECTS

- FP6-IP-No 026996 "ACGT-Advancing Clinico-Genomic Clinical Trials on Cancer: Open Grid Services for Improving Medical Knowledge Discovery" (2006-2010):

  The completion of the Human Genome Project sparked the development of many new tools for today's biomedical researcher to use in finding the mechanism behind disease. While the goal is clear, the path to such discoveries has been fraught with roadblocks in terms of technical, scientific, and sociological challenges. ACGT brings together internationally recognised leaders in their respective fields, with the aim to deliver to the cancer research community an integrated Clinico-Genomic ICT environment enabled by a powerful GRID infrastructure. In achieving this objective ACGT has formulated a coherent, integrated workplan for the design, development, integration and validation of all technologically challenging areas of work. Namely: (a) GRID: delivery of a European Biomedical GRID infrastructure offering seamless mediation services for sharing data and data-processing methods and tools, and advanced security; (b) Integration: semantic,

ontology based integration of clinical and genomic/proteomic data - taking into account standard clinical and genomic ontologies and metadata; (c) Knowledge Discovery: Delivery of data-mining GRID services in order to support and improve complex knowledge discovery processes.

- EU - IST "REWERSE- Reasoning on the Web with Rules and Semantics" (2004-2008):
  Aims to (i) develop a coherent and complete, yet minimal, collection of inter-operable reasoning languages for advanced Web systems and applications; (ii) test these languages on context-adaptive Web systems and Web-based decision support systems selected as test-beds for proof-of-concept purposes; (iii) bring the proposed languages to the level of open pre-standards amenable to submissions to standardisation bodies such as the W3C.

- GSRT - Op. Pr. Competitiveness "PROGNOCHIP - Development and Establishment of DNA Microarray Technology in Greece: Identification and Validation of Classification and Prognosis Molecular Markers for Breast Cancer" (2003-2006):

  The completion of the Human Genome Project and the development of post-genomic applications have allowed new holistic approaches to disease analysis that will revolutionize biomedical research and health care. Consultation of both the comprehensive genotypic information of the patient and the detailed molecular classification of the disease will result in individualized treatments. The Greek 'Prognochip' project applies this approach in the field of breast cancer prognosis and treatment. In particular, it aims at: (i) the intelligent processing of microarray data; (ii) the high level normalisation of microarray data; (iii) the classification of breast cancer profiles, (iv) the identification of candidate molecular markers, and (v) the delivery of an Integrated Clinico-Genomics Computational Environment to support the vision of individualized-medicine.

- Major responsibility for the research program:

  GSRT-EPET "SHMASIA – Multilingual Semantic Lexicon for Text Retrieval and Machine Translation" (2000-2001):
  Aims at the creation of a multilingual lexicon that combines semantic and syntactic information. This lexicon will allow multilingual text retrieval based on the whole meaning of phrases expressed in the language of the user, and not only based on simple or combined terms. Additionally, it will allow the resolution of lexical ambiguities in multilingual environments, resulting in the improvement of current multilingual text retrieval systems, as well as machine translation systems.

- EU - DGXIII, "Telematics" "TERM-IT - Multilingual Support for Multimedia Services" (1998-99):
  Aims at the development of a methodology for the production, dissemination, and maintenance of multilingual thesauri in the cultural sector. Emphasis is given on the specification of the user needs, and the availability of terminological resources.

- GSRT-EPET POLEMON - "Coordinated Services for the Documentation, Management, and Promotion of Cultural Heritage" (1995-97):
  Aims at creating an information system for the National Monuments Record, together with an integrated museum information system. These systems should have compatible information structures and procedures, as well as the level of technical infrastructure required for nationwide implementation.

- EU - DGIII, ESPRIT "AQUARELLE - Sharing Cultural Heritage through Multimedia Telematics" (1996-98):

Aims at the exchange of cultural information between cultural bodies, researchers, and publishers throughout Europe. The emphasis is on ensuring access by meaning, the standardization of multimedia data, multilingualism, and user friendliness.

- EU - DGIII, Information Technologies Programme "HYPERTOUR - A Hypermedia Platform Combining an Organizational Framework and a Methodology for the Exploitation and Promotion of Tourism in Europe of 2000" (1995-97):
  Aims at organizing the design, creation, distribution, and exploitation of multimedia titles promoting tourism in a business-centered manner covering the whole life-cycle of development.

TEACHING EXPERIENCE

Course Teaching in Department of Computer Science, University of Crete: 9/96-1/98, 9/98-present

File and Database Systems (HY-350)
Undergraduate course that covers introductory topics on knowledge representation, database design, file organization, architecture, and implementation of database management systems. The course has been extended with the introduction of object-oriented and client-server databases. The course project includes the development of an application used by the students for on-line course enrolment.

Topics on Spatio-temporal Databases (HY-652)
Advanced database course that covers special topics on spatial, temporal, and spatio-temporal databases. The course deals with data models, query languages, spatial and temporal relations, special indexing methods for spatio-temporal data. Additionally, it covers reasoning with qualitative and partial spatial and temporal data, as well as consistency checking and consistency maintenance.

Course Teaching in the Department of Electronics and Mechanical Engineering, Technical University of Crete: 10/94-6/95

Database Management System
Undergraduate course that deals with the design of databases, the architecture and implementation of database management systems. The course project includes the implementation of a simple storage manager, and the development of a simple application using a commercial database management system.

Graphics
Undergraduate course that deals with the manipulation, presentation, and storage of pictures. The course project includes the implementation of a simple graphical package.

Distributed Information Systems
Undergraduate course that deals with the design and implementation of distributed systems. The course project includes the implementation of a distributed system and application. The distributed system should support loosely connected computers based on the client-server model, and transparent access of information from remote subsystems.

Teaching Assistant at Michigan State University: 1/89-5/92
Worked as teaching assistant in the following courses:

- Computer Organization and Assembly Language

- Operating Systems
- Design of Database Systems (two-term sequence course)
- Introduction to Computing

PUBLICATIONS
Refereed International Journals

1. Ioannis Pachoulakis, Nikolaos Papadopoulos, Anastasia Analyti, *Kinect-Based Exergames Tailored to Parkinson Patients*, International Journal of Computer Games Technology, Volume 2018, ArticleID 2618271 14 pages, 2018, Hindawi Publishing.

2. Ioannis Pachoulakis, Diana Tsilidi, Anastasia Analyti, *Computer-Aided Rehabilitation for the Carpal Tunnel Syndrome using Exergames*, Advances in Image and Video Processing, 6(2), pp. 44-56, 2018, Society for Science and Education.

3. Diana Tsilidi, Ioannis Pachoulakis, Anastasia Analyti, *Carpal Tunnel Syndrome: Causes, Prevention, Rehabilitation and Computer-Aided, Game-Based Physiotherapy*, Advances in Image and Video Processing, 6(2), pp. 57-69, 2018, Society for Science and Education.

4. Ioannis Pachoulakis, Nikolaos Xilourgos, Nikolaos Papadopoulos, Anastasia Analyti, *Enrichment of a Kinect-based Physiotherapy and Assessment Platform for Parkinson's Disease Patients*, Advances in Image and Video Processing, 5(1), pp. 31-38, 2017, Society for Science and Education.

5. Christina Lantzaki, Panagiotis Papadakos, Anastasia Analyti, Yannis Tzitzikas, *Radius-aware approximate blank node matching using signatures*, Knowledge and Information Systems (KAIS) 50(2), pp. 505-542, 2017, Springer.

6. Ioannis Pachoulakis, Nikolaos Xilourgos, Nikolaos Papadopoulos, Anastasia Analyti, *A Kinect-Based Physiotherapy and Assessment Platform for Parkinson's Disease Patients*, Journal of Medical Engineering, 2016, Hindawi.

7. Anastasia Analyti, Ioannis Pachoulakis, *Faceted operations on composed RDF ontologies*, International Journal of Web Engineering and Technology, 11(2), pp. 174-194, 2016, Inderscience Publishers.

8. Carlo Meghini, Anastasia Analyti, *Query Processing in a P2P Network of Taxonomy-based Information Sources*, Open Journal of Web Technologies (OJWT), 3(1), pp. 1-25, 2016, Research online Publishing.

9. Anastasia Analyti, Carlos Viegas Damasio, Ioannis Pachoulakis, *Nested contextualised views in the web of data*, International Journal of Web Engineering and Technology, 10(1), pp. 31-64, 2015, Inderscience Publishers.

10. Anastasia Analyti, Carlos V. Damasio, Grigoris Antoniou, *Extended RDF: Computability and Complexity issues*, Annals of Mathematics and Artificial Intelligence, 75(3-4), pp. 267-334, 2015, Springer.

11. Anastasia Analyti, Carlos V. Damasio, Grigoris Antoniou, and Ioannis Pachoulakis, *Why-provenance Information for RDF, Rules, and Negation*, Annals of Mathematics and Artificial Intelligence, 70(3), pp. 221-277, 2014, Springer.

12. Yannis Tzitzikas, Mary Kampouraki, Anastasia Analyti, *Curating the Specificity of Ontological Descriptions under Ontology Evolution*, Journal on Data Semantics, 3(2), pp 75-106, 2014, Springer

13. Anastasia Analyti, Ioannis Pachoulakis, *Datatype Evolution on RDF ontologies*, International Journal of Web Engineering and Technology, 9(11), pp. 30-61, 2014, Inderscience Publishers.

14. Anastasia Analyti, Grigoris Antoniou, Carlos V. Damasio, Ioannis Pachoulakis, A framework for modular ERDF ontologies, Annals of Mathematics and Artificial Intelligence, 67(3-4), pp. 189-249, 2013

15. Anastasia Analyti, Ioannis Pachoulakis, *Provenance and Temporally Annotated Logic Programming*, International Journal of Advanced Research in Artificial Intelligence (IJARAI), 1(7), 2012, The Science and Information Organization (USA)

16. Anastasia Analyti, Ioannis Pachoulakis, *A Survey on Models and Query Languages for Temporally Annotated RDF*, International Journal of Advanced Computer Science and Applications (IJACSA), 3(9), 2012, The Science and Information Organization (USA)

17. Anastasia Analyti, Ioannis Pachoulakis, *Temporally Annotated Extended Logic Programs*, International Journal of Advanced Research in Artificial Intelligence (IJARAI), 1(7), 2012, The Science and Information Organization (USA)

18. Anastasia Analyti, Grigoris Antoniou, Carlos V. Damasio, *MWeb: A Principled Framework for Modular Web Rule Bases and its Semantics*, ACM Transactions on Computational Logic 12(2): article 17, 2011, ACM Press.

19. Anastasia Analyti, Grigoris Antoniou, Carlos V. Damasio, Gerd Wagner, *Extended RDF as a Semantic Foundation of Rule Markup Languages*, Journal of Computer Artificial Research (JAIR), 32, pp. 37-94, 2008, AAAI Press.

20. Yannis Tzitzikas, Anastasia Analyti, Nicolas Spyratos, Panos Constantopoulos**,** *An Algebra for Specifying Valid Compound Terms in Faceted Taxonomies*, Data and Knowledge Engineering, 62(1), pp. 1-40, 2007, Elsevier

21. Anastasia Analyti, Manos Theodorakis, Nicolas Spyratos, Panos Constantopoulos, *Contextualization as an Independent Abstraction Mechanism for Conceptual Modeling*, Information Systems, 32(1), pp. 24-60, 2007, Elsevier.

22. Anastasia Analyti, Ioannis Pachoulakis, *Logic Programming Representation of the Compound Term Composition Algebra*, Fundameta Informaticae, 73(3), pp. 321-360, 2006, IOS Press.

23. Yannis Tzitzikas, Anastasia Analyti, *Mining the Meaningful Term Conjunctions from Materialised Faceted Taxonomies: Algorithms and Complexity*, Knowledge and Information Systems: An International Journal (KAIS), 9(4), pp. 430-467, 2006, Springer-Verlag.

24. Yannis Tzitzikas, Anastasia Analyti, Nicolas Spyratos, *Compound Term Composition Algebra: The Semantics*, Journal of Data Semantics II, Springer-Verlag, pp. 58-84, 2005

25. Anastasia Analyti, Grigoris Antoniou, Carlos V. Damasio, Gerd Wagner, *Negation and Negative Information in the W3C Resource Description Framework,* Annals of Mathematics, Computing & Teleinformatics (AMCT), 1(2), 2004, pp 25-34, TEI Larissa.

26. Manos Theodorakis, Anastasia Analyti, Panos Constantopoulos, Nicolas Spyratos, *A Theory of Context in Information Bases,* Information Systems, 27(3), pp. 151-191, 2002, Elsevier.

27. Anastasia Analyti, Nicolas Spyratos, Panos Constantopoulos**,** *Deriving and Retrieving Contextual Categorical Information through Instance Inheritance,* Fundamenta Informaticae, 44(4) (2000), pp. 321 - 351.

28. Anastasia Analyti, Nicolas Spyratos, Panos Constantopoulos, *On the Semantics of a Semantic Network,* Fundamenta Infomaticae, 36(2-3) (1998), pp. 109-144, IOS Press.

29. Anastasia Analyti, Nicolas Spyratos, Panos Constantopoulos**,** *Deriving Semantic Information through Property Covering and Inheritance,* Data and Knowledge Engineering, 28(1), pp. 3-30, 1998, Elsevier.

30. Anastasia Analyti, Panos Constantopoulos, Nicolas Spyratos**,** *Specialization by Restriction and Schema Derivations,* Information Systems, Vol. 23, No. 1, pp. 1-38, 1998, Elsevier.

31. Anastasia Analyti, Sakti Pramanik, *Reliable Semantics for Extended Logic Programs with Rule Prioritization,* Journal of Logic and Computation, 5(3), 1995, pp 303-324, Oxford University Press.

32. Anastasia Analyti, Sakti Pramanik, *Performance Analysis of a Main Memory Multi-Directory Hashing Technique,* Information Processing Letters, 45, pp. 191-197, 1993, Elsevier.

33. Anastasia Analyti, Sakti Pramanik, *Multi-Directory Hashing,* Information Systems, 13(1), pp. 63-74, 1993, Elsevier.

Refereed Conference Proceedings

1. Carlos Viegas Damasio, Joao Moura, Anastasia Analyti, *Unifying Justifications and Debugging for Answer-Set Programs*, 31st International Conference on Logic Programming (ICLP 2015), Technical Communications, CEUR-WS Vol-1433, 2015.

2. Christina Lantzaki, Thanos Yannakis, Yannis Tzitzikas, Anastasia Analyti, *Generating Synthetic RDF Data with Connected Blank Nodes for Benchmarking*, 11th Extended Semantic Web Conference (ESWC-2014), Greece, pp. 192-207, 2014, Springer.

3. Carlos V. Damasio, Anastasia Analyti, Grigoris Antoniou, *Justifications for Logic Programming*, 12th International Conference on Logic Programming and Nonmonotonic Reasoning (LPNMR-2013), Spain, September 2013, pp. 530-542, Springer

4. Carlos V. Damasio, Anastasia Analyti, Grigoris Antoniou, *Provenance for SPARQL Queries*, 11th International Semantic Web Conference (ISWC-2012), USA, November

2012, pp. 625-640, Springer-Verlag

5. Yannis Tzitzikas, Anastasia Analyti, Mary Kampouraki, *Curating the Specificity of Metadata while World Models Evolve*, 9th Annual iPRES Conference on Digital Preservation (iPRES-2012), Canada, October, 2012

6. Carlos V. Damasio, Anastasia Analyti, Grigoris Antoniou, *Modularity in the Rule Interchange Format*, Proceedings of the 5th International Symposium on Rules (RULE-ML 2011), Spain 2011, Springer-Verlag.

7. Carlos V. Damasio, Anastasia Analyti, Grigoris Antoniou, *Implementing Simple Modular ERDF ontologies*, 19th European Conference on Artificial Intelligence (ECAI-2010), Portugal 2010 (Short Paper), pp. 1083-1084, IOS Press.

8. Carlos V. Damasio, Anastasia Analyti, Grigoris Antoniou**,** *Embeddings of Simple Modular Extended RDF*, 4th International Conference Web Reasoning and Rule Systems (RR 2010), Italy 2010, pp. 204-212, Springer-Verlag.

9. Anastasia Analyti, Grigoris Antoniou, Carlos V. Damasio, *A Formal Theory for Modular ERDF Ontologies*, Proceedings of Third International Conference Web Reasoning and Rule Systems (RR 2009), pp. 212-226, Chantilly, VA, USA, October 2009, Springer Verlag.

10. Anastasia Analyti, Yannis Tzitzikas, Nicolas Spyratos, *Specifying Valid Compound Terms in Interrelated Faceted Taxonomies*, Proceedings of 28th International Conference on Conceptual Modeling (ER 2009), Gramado, Brazil, Novermber 2009, Springer Verlag.

11. Gerd Wagner, Adrian Giurca, Ion-Mircea Diaconescu, Grigoris Antoniou, Anastasia Analyti, Carlos V. Damasio, *Reasoning on the Web with Open and Closed Predicates*, Proceedings of Third International Workshop on Applications of Logic Programming to the (Semantic) Web and Web Services (ALPSWS 2008), in conjunction with ICLP'08, pp. 71-84, Udine, Italy, December 2008, CEUR-WS.org2008.

12. Anastasia Analyti, Grigoris Antoniou, Carlos V. Damasio, Gerd Wagner, *On the Computability and Complexity Issues of Extended RDF*, Proceedings of the Tenth Pacific Rim International Conference on Artificial Intelligence (PRICAI-08), pp. 5-16, Hanoi, Vietnam, December 2008, Springer Verlag.

13. Eleni G. Christodoulou, Marina Ioannou, Maria Kafousi, Elias Sanidas, Georgios Papagiannakis, Vasiliki Danilatou, Georgia Tsiliki, Thanassis Margaritis, Haridimos Kondylakis, Dimitris Manakanatas, Lefteris Koumakis, Alexandros Kanterakis, Stamatis Vassilaros, Manolis Tsiknakis, Anastasia Analyti, George Potamias, Dimitris Tsiftsis, Elias Stathopoulos, Dimitris Kafetzopoulos, *A new gene expression signature related to breast cancer Estrogen Receptor status*, Procs. of the 8th International Conference on BioInformatics and BioEngineering (BIBE 2008), Greece, October 2008, IEEE Computer Society Press.

14. Anastasia Analyti, Grigoris Antoniou, Carlos V. Damasio, *A Principled Framework for Modular Web Rule Bases and its Semantics*, Procs. of the 11th International Conference on Principles of Knowledge Representation and Reasoning (KR 2008), pp. 390-400, Australia, September 2008, AAAI Press.

15. Anastasia Analyti, Grigoris Antoniou, Carlos V. Damasio, Gerd Wagner, *Computability and Complexity Issues of Extended RDF*, Procs. of the 18th European Conference on

Artificial Intelligence (ECAI 2008), pp. 733-734, Greece, July 2008, IOS Press. (short paper)

16. George Potamias, Lefteris Koumakis, Alexandros Kanterakis, Stelios Sfakianakis, Anastasia Analyti, Vassilis Moustakis, Dimitris Kafetzopoulos, Stefan Rueping, Manolis Tsiknakis , *Knowledge Discovery Scientific Workflows in Clinico-Genomics,* Procs. of the 19th IEEE International Conference on Tools with Artificial Intelligence (ICTAI 2007), Greece, October 2007, IEEE Computer Society Press.

17. Haridimos Kondylakis, Anastasia Analyti, Dimitris Plexousakis, *Quete: Ontology-Based Query System for Distributed Sources,* Procs. of the 11th East European Conference on Advances in Databases and Information Systems (ADBIS'07), pp. 359-375, Bulgaria, September 2007, LNCS 4690, Springer Verlag.

18. Yannis Tzitzikas, Anastasia Analyti, *Faceted Taxonomy-based Information Management,* Procs. of the DEXA International Workshop on Dynamic Taxonomies and Faceted Search (FIND'07), pp. 207-211, 2007, IEEE Computer Society Press.

19. Anastasia Analyti, Haridimos Kondylakis, Dimitris Manakanatas, Manos Kalaitzakis, Dimitris Plexousakis, George Potamias, *Integrating Clinical and Genomic Information Through the PrognoChip Mediator,* Procs. of the 7th International Symposium on Biological and Medical Data Analysis (ISBMDA-2006), pp. 250-261, 2006, Springer Verlag.

20. Manolis Tsiknakis, Dimitris Kafetzopoulos, George Potamias, Anastasia Analyti, Kostas Marias, Stelios Sfakianakis, *Developing a European Biomedical GRID for post-genomic research on Cancer,* Procs. of the IEEE International Topic Conference on Information Technology in Biomedicine (ITAB-2006), October, Greece, 2006

21. Carlos V. Damasio, Anastasia Analyti, Grigoris Antoniou, Gerd Wagner, *Supporting Open and Closed World Reasoning on the Web,* Procs. of 4th Workshop on Principles and Practice of Semantic Web Reasoning (PPSWR 2006), Budva, Montenegro, pp. 149-163, June 2006, Springer Verlag.

22. Manolis Tsiknakis, Dimitris Kafetzopoulos, George Potamias, Anastasia Analyti, Kostas Marias, Andreas Maganas, *Building a European Biomedical Grid on Cancer: The ACGT Integrated Project,* Challenges and Opportunities of HealthGrids: Procs. of the HealthGrid 2006 conference, volume 120, pp. 247-258, Valencia, Spain, June 2006, IOS Press.

23. Carlos V. Damasio, Anastasia Analyti, Grigoris Antoniou, Gerd Wagner, *Open and Closed World Reasoning in the Semantic Web,* Procs. of the 11th Intern. Conference on Information Processing and Management of Uncertainty in Knowledge-Based Systems (IPMU 2006), Paris, France, July 2006.

24. Anastasia Analyti, Grigoris Antoniou, Carlos V. Damasio, Gerd Wagner, *Stable Model Theory for Extended RDF ontologies,* Proceedings of 4th International Semantic Web Conference (ISWC 2005), pp. 21-36, Galway, Ireland, November 2005, Springer Verlag.

25. George Potamias, Anastasia Analyti, Dimitris Kafetzopoulos, Maria Kafousi, Thanassis Margaritis, Dimitris Plexousakis, Panagiota Poirazi, Martin Reczko, Ioannis G. Tollis, Elias Sanidas, Efstathios Stathopoulos, Manolis Tsiknakis, Stamatis Vassilaros, *Breast Cancer and Biomedical Informatics: The PrognoChip Project,* Proceedings of the 17th

IMACS World Congress Scientific Computation, Applied Mathematics and Simulation, ISBN 2-915913-02-1, Paris, France, 2005.

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33. Anastasia Analyti, Nicolas Spyratos, Panos Constantopoulos, Martin Doerr**,** *Inheritance under Participation Constraints and Disjointness,* Proc. of the 8th European-Japanese Conference on Information Modelling and Knowledge Bases (EJC 1998), 1998. Also in book: Information Modeling and Knowledge Bases X,: H. Jaakkola, H. Kangassalo, E. Kawaguchi (eds.), pp. 254-274, 1999, IOS Press.

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37. Anastasia Analyti, Stavros Christodoulakis, *Multimedia Object Modelling and Content-Based Querying,* Proceedings of the Advanced Course Multimedia Databases in Perspective, University of Twente, 1995, pp 213-238.

38. Anastasia Analyti, Sakti Pramanik, *Declarative Semantics for Contradictory Modular Logic Programs,* Proceedings of the 8th International Symposium on Methodologies for Intelligent Systems (ISMIS'94), pp. 245-254, 1994, Springer Verlag.

39. Anastasia Analyti, Sakti Pramanik, *Semantics for Reasoning with Contradictory Extended Logic Programs,* Proceedings of the GULP-PRODE' 94 Joint Conference on Declarative Programming, pp. 434-448, 1994.

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1. A. Analyti and S. Christodoulakis, "Content-Based Querying", Multimedia Databases in Perspective, P. Apers, H. Blanken, M. Houtsma (eds.), Springer-Verlag, pp. 145-180, 1997.

2. S. Pramanik and A. Analyti, "Query Processing in Databases", MacMillan Encyclopedia of Computers, MacMillan Publishing Company, pp. 813-816, 1992.

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1. A. Analyti and S. Christodoulakis, "Guest Editorial: Special Issue on Multimedia Information Systems", Information Systems, 20(6), pp. 443-444, 1995.

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1. Yannis Tzitzikas, Nicolas Spyratos, Panos Constantopoulos, Anastasia Analyti, *Extended Faceted Taxonomies for Web Catalogs* , ERCIM News, Volume 51, October 2002 (special issue: Semantic Web).

2. Carlo Meghini, Yannis Tzitzikas, Anastasia Analyti, *Query Evaluation in P2P Systems of Taxonomy-based Sources: Algorithms, Complexity, and Optimizations,*, CoRR Report, arXiv:0709.3034, 2007.

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1. M. Theodorakis, A. Analyti, P. Constantopoulos, and N. Spyratos, "Contextualization as an Abstraction Mechanism for Conceptual Modeling", Institute of Computer Science, Foundation for Research and Technology-Hellas, TR99-0255, 1999.

2. A. Analyti, N. Spyratos, and P. Constantopoulos, "Deriving and Retrieving Contextual Categorical Information through Instance Inheritance", Institute of Computer Science, Foundation for Research and Technology-Hellas, TR98-0220, 1998.

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4. A. Analyti, N. Spyratos, and P. Constantopoulos, "Property Covering a Powerful Construct for Schema Derivations", Institute of Computer Science, Foundation for Research and Technology-Hellas, TR97-0199, 1997.

5. A. Analyti, N. Spyratos, and P. Constantopoulos, "Inheritance under Participation Constraints and Disjointness", Institute of Computer Science, Foundation for Research and Technology-Hellas, TR97-0198, 1997.

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INTERVIEWS

1. Interview in the newspaper "Ta Nea", 17 November 1998, pp. 37.

PARTICIPATION IN DOCTORAL DISSERTATION COMMITTEES

- A. Bikakis, "Defeasible Contextual Reasoning in Ambient Intelligence", University of Crete, 2009.

- Co-supervision with Panos Constantopoulos:

  E. Theodorakis, "Contexts and Naming in Information Bases", University of Crete, 2001.

PARTICIPATION IN MASTER THESIS COMMITTEES

- I. Kargakis, "Conversion and Emulation-aware Dependency Reasoning for the needs of Digital Preservation", University of Crete, 2013.

- Co-supervision with Yannis Tzitzikas:

  M. Kabouraki, “Managing the Specificity of Ontological Descriptions under Ontology Evolution”, University of Crete, 2011.

- N. Manolis, “Interactive Exploration of Fuzzy RDF Knowledge Bases”, University of Crete, 2011.

- D. Manakanatas, “Design and Implementation of a Tool for Semi-automated Semantic Schema Matching”, University of Crete, 2006.

- H. Kondylakis, “Query Processing in Distributed Database Systems”, University of Crete, 2006.

- Th. Skylogiannis, “Automated Negotiation and Semantic Brokering with Intelligent Agents using Defeasible Logic”, University of Crete, 2005.

- G. Serfiotis, “Optimizing and Reformulating RQL – Queries on the Semantic Web”, University of Crete, 2005.

- A. Bikakis, “A System for Nonmonotic Rules on the Web”, University of Crete, 2004.

- Co-supervision with Panos Constantopoulos:

  I. Zidianakis, “TELQUEL: A Query Language for the Semantic Indexing System”, University of Crete, 1998.

- Co-supervision with Panos Constantopoulos and George Georgakopoulos:

  A. Yiortsou, “Investigating the introduction of temporal dimension in the Semantic Indexing System”, University of Crete, 1998.

SUPERVISION OF DIPLOMA & PRACTICE PROJECTS

- G. Tampakis, “Tool study, installation, and use for processing microarray experiment data”, University of Crete, 2004. (co-supervision with Dimitris Plexousakis)

- K. Terzakis, “VoteRank MetaSearcher – Implementation of a Metasearch engine”, University of Crete, 2003. (co-supervision with Yannis Tzitzikas)

- A. Koukourikos, “Oracle/RQL Interpreter Interface”, Practice Project, University of Crete, 2003. (co-supervision with Vassilis Christophides)

- F. Askiti, “Adjusting the user interface of the Semantic Index System”, University of Crete, 1999.

- A. Rodiati, “Design tool development for the conceptual schema of relational databases”, University of Crete, 1999.

- N. Giannadakhs, “PELOPAS - An information management system for the university department secretaries", University of Crete, 1999.

- K. Livani, "Information system to support the laboratory processes of the machine MU.S.I.S.", University of Crete, 1999. (co-supervision Martin Doerr)

- K. Gialamoudi, "Improvement and adjustment of management tools for cultural data bases", Practice Project, University of Crete, 1999.

- S. Stogiannopoulos, "Development of a document management application for the University of Crete", University of Crete, 1998.

- G. Maragkoudakis, "Client subsystem and client-server communication in the object-oriented database management system KYDONIA", Technical University of Crete, 1995.

- G. Mauragiannis, "Implementation of the object and session manager on the server of an object-oriented client-server database management system", Technical University of Crete, 1995.

- G. Ninios, "Design and implementation of the index and catalog manager, and the query processor in an object-oriented multimedia database management system", Technical University of Crete, 1995.

- G. Kiriakaki, "Design and implementation of the query submission and processing subsystem of an object-oriented client-server database management system", Technical University of Crete, 1995.

- N. Papas, "Design and implementation of the request scheduler and the buffer manager for the server KYDONIA", Technical University of Crete, 1995.

- M. Mpalantinos, "Design and implementation of an interactive presentation system for multimedia database management systems", Technical University of Crete, 1995.

AWARDS

- Alexander S. Onassis Public Benefit Foundation Scholarship (1992-1993)
- Zonta International Amelia Earhart Fellowship Award (1991-92)
- Society of Women Engineers Fellowship Award (1989-90 and 1990-91)
- Fulbright Fellowship Award (1988-89)
- Scholarship and Award of Excellence of the National Board of Scholarships, Greece, four times recipient (1984-1988)

SCIENTIFIC SERVICES

- Co-editor with Andrian Giurca and Gerd Wagner of the proceedings of 2nd East European Workshop on Rule-Based Applications (RuleApps 2008), June 2008.

- Member of the Program Committee of the 3rd International Workshop on Dynamic Taxonomies and Faceted Search, FIND'08 (at DEXA'2008), Torino, Italy, September 2008.

- Member of the Program Committee of the 2nd International Workshop on Dynamic Taxonomies and Faceted Search, FIND'07 (at DEXA'2007), Regensburg, Germany, September 3-7, 2007.

- Member of the Program Committee of the 1st International Workshop on Peer-to-Peer Computing and Databases (P2P&DB'04), in conjunction with EDBT'04, March 2004

- Invited co-editor of the international journal Information Systems for a special issue on Multimedia Information Systems (Sept. 1995).

- Review of articles submitted for publication to various journals, including ACM Multimedia Systems, ACM Transactions on Database Systems, Information Systems, Information Processing Letters, Distributed and Parallel Databases, Journal of Web Semantics.

- Reviewer of articles submitted for publication to various scientific conferences and journals.

- Organization of seminar series on Information Systems, Institute of Computer Science, Foundation for Research and Technology-Hellas: 1996-1999.

- Maim responsibility for the selection of scientific journals and books in the area of Information Systems for the library of the Institute of Computer Science, Foundation for Research and Technology-Hellas: 1996-1999.

OLDER MEMBERSHIPS IN SCIENTIFIC SOCIETIES

Association for Computing Machinery
Association for Logic Programming
Greek Computer Society