
Teaching and Research in Artificial Intelligence

Department of Informatics and Telecommunications

University of Athens

INRIA Sophia Antipolis, 14 February 2012



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UNIVERSITY OF ATHENS

Presenter: Manolis Koubarakis



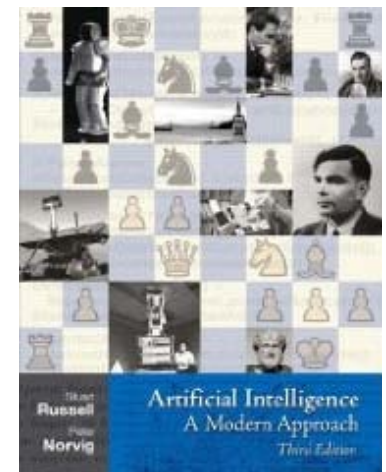
- Faculty
 - Teaching
 - Current research highlights
 - European projects
 - Possible collaborations with INRIA
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- **Izambo Karali** (Assistant Professor)
 - **knowledge representation, semantic web, logic programming**
 - **Manolis Koubarakis** (Professor)
 - **knowledge representation, semantic web, linked data, constraint satisfaction, databases**, distributed systems, information retrieval, requirements modeling
 - **Takis Stamatopoulos** (Assistant Professor)
 - **search, constraint satisfaction, operations research, logic programming**, knowledge representation, natural language processing, machine learning
 - Other faculty members also study/use AI techniques in their area (Hadjiefthymiades, Gunopulos, Manolakis, Achlioptas, Koutsoupas, Theodoridis)
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- **Artificial Intelligence** (1st semester, 3rd year)
 - Topics: introduction, rational agents, search, constraint satisfaction, knowledge representation
- **Artificial Intelligence II** (2nd semester, 3rd year)
 - Topics: planning, advanced knowledge representation, ontologies, uncertainty, probabilistic reasoning, applications
- **Logic programming** (2nd semester, 3rd year)
 - Topics: Prolog, logic programming, constraint logic programming.





- **Advanced Artificial Intelligence**
 - Topics: planning, machine learning, natural language processing, constraint satisfaction
 - **Knowledge Technologies**
 - Topics: semantic web and linked data, RDF, SPARQL, description logics, OWL 2, rules, ontology engineering, applications.
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- **Semantic web and linked data**
 - Scalable management of linked data in P2P and cloud-based systems
 - Development of P2P system Atlas (<http://atlas.di.uoa.gr/>)
 - Applications: distributed digital libraries, web service registries
 - 2 recent Ph.D. theses
 - Zoi Kaoudi (currently at INRIA/LRI Leo team)
 - Iris Miliaraki (currently at MPI Saarbrücken)
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- **Linked geospatial data**

- stRDF/stSPARQL: extensions of RDF and SPARQL with geospatial data that change over time
 - Development of system Strabon (<http://www.strabon.di.uoa.gr/>)
 - Applications: open government data, satellite image annotation, sensor web registries etc.
 - 2 Ph.D. theses (expected) and 4 M.Sc. theses (some completed)
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- **Constraint satisfaction**

- Temporal and spatial constraints
 - Constraint logic programming
 - Constraint satisfaction for operations research problems
 - Development of the Naxos constraint solver (<http://cgi.di.uoa.gr/~pothitos/naxos/>)
 - 1 Ph.D. thesis (expected)
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SensorGrid4Env

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- > [Tutorial "Building Semantic Sensor Webs and Applications" at ESWC 2011](#)
31 January 2011 08:08
- > [Urban Flood workshop](#)
12 November 2010 08:28
- > [Workshop held at the University of Southampton](#)
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SemSorGrid4Env in a nutshell

The main objective of SemSorGrid4Env is to specify, design, implement, evaluate and deploy a service-oriented architecture and middleware which allows application developers to build **open large-scale semantic-based sensor network applications for environmental management**. Such architecture and middleware will enable the rapid development of thin applications (e.g., mashups) that require **real-world real-time data** coming from heterogeneous sensor networks, making it possible to use sensors for other environmental management purposes than those that they were originally expected to have (hence reducing sensor network deployment costs) and to **combine their real-time data with historical data** from other data sources, opening possibilities of improving current decision-making procedures in a variety of situations (emergencies, monitoring, etc). [Read more...](#)

Solutions for emergency response:

- o [Flood risks in Southern UK](#)
- o [Forest fire risks in Spain](#)



Architecture and technologies for building Sensor Web applications:

- o [An Architecture for Sensor Web Applications](#)
- o SNEE: Data Stream Access

Administrative description and deliverables:

- o [Partners](#)
- o [Work plan](#)
- o [Deliverables](#)





Virtual Observatory Infrastructure for Earth Observation Data

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Project summary



Earth observation data have increased considerably over the last decades with satellite sensors collecting and transmitting back to Earth several terabytes of data per day. This data acquisition rate is a major challenge to existing data management, exploitation and dissemination approaches used by various agencies such as ESA, NASA and European national space agencies. The availability of earth observation data now outstrips the availability of human intelligence to exploit it. To make the available petabytes of EO data

Facts

Start: September 1st, 2010
Duration: 36 months
Budget (total): approx. € 3.7 millions
EC contribution: approx. € 2.8 millions
Partners: 6 (from 4 countries)
Funded by call: FP7-ICT-2009-5
Project Number: 257662

News

[Publication about Astronomical Data Processing Using SciQL, an SQL Based Query Language for Array Data](#)
[Terra Cognita 2011](#)
[First year review](#)
[Publication about SciQL, Bridging the Gap between Science and Relational DBMS](#)
[Article about TELEIOS in the Greek newspaper "To Vima"](#)
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- INRIA Sophia Antipolis Edelweiss team
 - INRIA/LRI Leo team (Ioanna Manolescu)
 - INRIA Grenoble Rhône-Alpes Exmo team (Jerome Euzenat)
 - INRIA-Rennes Campus ASAP team (Anne-Marie Kermarrec)
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Questions?



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