

Curriculum Vitae

Stasinios Konstantopoulos

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Personal information

Date of birth: September 2nd, 1973

Place of birth: Athens, Greece

Nationality: Greek

Degrees

PhD: October 1998 – November 2003

Followed a doctoral programme at the Department of Alfa-Informatica (now Informatiekunde), *Rijksuniversiteit* Groningen and researched the application of Machine Learning (and, in particular, Inductive Logic Programming) on Language Technology, under the supervision of Prof. John Nerbonne (Informatiekunde). This research culminated to a doctoral thesis on ‘Using Inductive Logic Programming to Learn Local Linguistic Structures,’ successfully defended on November 28th, 2003.

MSc: October 1997 – September 1998

MSc in Artificial Intelligence at the Department of Artificial Intelligence (now Division of Informatics) of the University of Edinburgh. I attended the modules of the Natural Languages Theme of the course. My MSc project was ‘A Morphological Analyser for Scottish Gaelic’, under the supervision of Graeme Ritchie (Dept. of AI, now at Univ. of Aberdeen), Roibeard Ó Maolalaigh (Dept. of Celtic) and Alan Black (CSTR, Univ. of Edinburgh, now at LTI, Carnegie Mellon University).

MEng: September 1991 – June 1997

Studied at the Computer Engineering and Informatics Department (CEID), University of Patras. My final project involved the *Simulation of Asynchronous Transfer Mode Architectures and Radio Networks using the DSS Simulator*, and was conducted under the supervision of Prof. Pavlos Spirakis (CEID) and Vassilis Tampakas (CEID, now at TEI Patras).

Additional education

Logic: As part of my PhD coursework, I attended two editions of the European Summer School in Language, Logic and Information (ESSLLI): in Utrecht, 1999 and in Helsinki, 2001. During my undergraduate studies I also attended ESSLLI 1996 in Prague.

MPI: attended a short course on the Message Passing Interface (MPI) organised by the Computation Centre of the University of Groningen.

Research experience

DELTIO: Using Evolving Ontologies to Analyse Multimedia Content, with an Application to News Broadcasts. URL: <http://www.atc.gr/deltio/>

DELTIO is a national project funded by the Greek General Secretariat for Research & Technology. The project started in April 2006 and will run until January 2008. DELTIO develops a tool that analyses news broadcasts video clips and automatically categorizes them according to a thematic taxonomy used by journalists.

I joined the NCSR 'Demokritos' site of the project in October 2006. My work in DELTIO involves developing an Inductive Logic Programming algorithm that constructs rules in Fuzzy Description Logic. The rules achieve the fusion of the results of the individual video analysis tools into a comprehensive semantic model of the video clip.

SHARE: Mobile Support for Rescue Forces. URL: <http://www.ist-share.org/>

SHARE was a an EU-funded Specific Targeted Research Project (STREP) under the 6th Framework Programme (FP6-IST). The project ran from November 2004 through October 2007 and developed a Push-To-Share advanced mobile service that provides critical multi-modal communication support for emergency teams during extensive rescue operations and disaster management.

I joined the NCSR 'Demokritos' site in March 2005, and I worked on the semantic modelling on Search-and-Rescue operations. This model was used to support a resource management and decision support module, part of of SHARE-ODS, an integrated data service for Search-and-Rescue operations.

Learning Computational Grammars. URL: <http://www.cnts.ua.ac.be/lcg/>

Learning Computational Grammars was a EU-funded Training and Mobility project which began in April 1998 and ran for four years. The project involved researchers from seven European research labs, five of which academic and two corporate. The goals of the project were to explore Machine Learning techniques for Natural Language. There was a focus on the comparison of results based on attempts to learn the Noun Phrase structure of English.

I joined the Groningen site in October 1998 and worked for the project until its conclusion. My research was focused on Inductive Logic Programming and its application to the task of learning the structure of Noun Phrases.

Development and computer skills

Programming and scripting languages

I have extensive programming experience in C and Prolog. I am involved in the development the YAP Prolog system (written in C). My major contributions so far have been the HP-UX port and the development of a Prolog interface to Message Passing Interface (MPI) libraries for parallel programming.

I have also developed in Prolog YADLR, a multi-valued Description Logics reasoner, which is using Constraint Linear Programming in order to algebraically resolve queries. In this manner, the valuation (degree, from a fuzzy logic perspective) associated with a Knowledge Base assertion does not have to be known in advance. When querying, the valuation of the query is returned not as a value, but as a function of such ungrounded KB assertion valuations.

I am currently developing in C TRANSONTO, an ontology conversion tool for converting between the various ontology representation formalisms. The tool is design in a modular architecture, where an RDF internal store is complemented by the various parsers and printers.

See <http://sourceforge.net/users/stasinos/> for more details about YAP, YADLR, and TRANS`ONTO`.

I also have extensive experience in scripting, mostly for manipulating linguistic corpora for the purposes of my computational linguistics research. I am most experienced with bash, AWK, and Perl scripting.

Finally, I have some experience in Java programming, particularly for the purposes of ontology manipulation.

Ontologies & the semantic web

In the course of the SHARE project, I have acquired extensive experience in semantic modelling—and particularly in OWL—and in OWL ontologies design, manipulation, and querying. For my work in SHARE I have designed an OWL model of Search-and-Rescue operations and I have participated in developing a data service for this model. The data service integrates the Protégé library for ontology population and manipulation and Jena and Pellet for querying and reasoning, in order to support a command, controls, and communications platform for Search-and-Rescue operations.

Combined with my knowledge of logical formalisms, my experience with Semantic Web technologies has given me a solid background on the theoretical underpinnings of Semantic Web technologies and formalisms.

Unix systems administration

I have worked on, and am very familiar with, various Unix-like platforms (HP-UX, Solaris, FreeBSD, and Linux). My experience with such platforms includes working as assistant systems administrator for the Unix network of the Faculty of Arts of the University of Groningen.

Other Professional Activities

Membership in Organizations

I am a member of RIF, the Rule Interchange Format working group of the W3C. RIF is preparing a W3C recommendation on a unifying formalism for the various logic-based rule formalisms used in conjunction with Semantic Web technologies. (<http://www.w3.org/2005/rules/>)

I am also a member of POWDER, the Protocol for Web Description Resources working group of the W3C. POWDER is preparing a W3C recommendation for a mechanism for formally describing suitability of web resources to certain audiences or clients (e.g., child-safe, mobile compatible). (<http://www.w3.org/2007/powder/>)

Finally, I am a member of EETN, the Greek Artificial Intelligence Society. (<http://www.eetn.gr/>)

I have reviewed submissions to:

- the International Journal on Artificial Intelligence Tools (IJAIT)
- The 6th International Semantic Web Conference, ISWC 2007
- 12th Conference on Empirical Methods in Natural Language Processing and 11th Conference on Computational Natural Language Learning, Joint Meeting, EMNLP-CoNLL 2007.
- The 45th Annual Meeting of the Association for Computational Linguistics, ACL 2007.
- 11th International Conference on User Modeling, UM 2007
- 17th European Conference on Machine Learning, ECML 2006

- Conference of the International Federation for Information Processing, IFIP-AI 2006. Organized in the framework of the IFIP World Computer Congress.
- 4th Conference of the Greek Artificial Intelligence Society, SETN 2006.
- 3rd Annual European Semantic Web Conference, ESWC 2006
- 9th European Conference on Principles and Practice of Knowledge Discovery in Databases, PKDD 2005

Academic events organisation

I was one of the two organisers of TABU-day 2000, an annual one-day conference on general linguistics, organised by the University of Groningen. For more information see <http://www.let.rug.nl/events/tabu/2000/>.

Publications

Dissertations, Books, and Book Chapters

- Stasinos Konstantopoulos, Rui Camacho, Nuno Fonseca, and Vítor Santos Costa, *Induction as a Search*. Accepted for inclusion in: Dimitris Vrakas and Ioannis Vlahavas (eds), *Artificial Intelligence for Advanced Problem Solving Techniques*. To be published by Idea Group, Hershey, PA, USA, 2008.
- Stasinos Konstantopoulos, *Using ILP to Learn Local Linguistic Structures*, PhD Thesis, Faculteit der Wiskunde en Natuurwetenschappen, Rijksuniversiteit Groningen. Groningen, 2003.
- Stasinos Konstantopoulos, *A Morphological Analyser for Scottish Gaelic*, MSc Dissertation, Department of AI, University of Edinburgh. Edinburgh, 1998.
- Stasinos Konstantopoulos, *Simulation of Asynchronous Transfer Mode Architectures and Radio Networks using the DSS Simulator*, MEng Dissertation, Computer Engineering and Informatics Department, University of Patras (in Greek). Patras, 1997.

Papers at Refereed Conferences

- Georgios Apostolikas and Stasinos Konstantopoulos, *Error Back-propagation in Multi-valued Logic Systems*. Proc. Intl. IEEE Conf. on Computational Intelligence and Multimedia Applications (ICCIMA 07), Sivakasi, India, Dec. 2007.
- Stasinos Konstantopoulos and Giorgos Apostolikas, *Fuzzy-DL reasoning over unknown fuzzy degrees*. Proc. 3rd International IFIP Workshop on Semantic Web & Web Semantics (IFIP SWWS 2007), Vilamoura, Portugal, 29–30 Nov. 2007. Proceedings published as vol. 4806, Lecture Notes in CS. Springer, Berlin/Heidelberg, 2007.
- Vassiliki Rentoumi and Stasinos Konstantopoulos, *Heuristic disambiguation of deverbal nominals in Greek*. In: Zygmunt Vetulani (ed.) *Human Language Technologies as a Challenge for Computer Science and Linguistics: Proceedings of 3rd Language & Technology Conference*, 5–7 October 2007, Poznań, Poland.
- Stasinos Konstantopoulos, *What's in a Name?* In: Petya Osenova et al (eds.) Proceedings of Computational Phonology Workshop, 6th Intl. Conf. on Recent Advances in NLP (RANLP 07), September 2007, Borovets, Bulgaria.
- Jens Pottebaum, Stasinos Konstantopoulos, Rainer Koch, and Georgios Paliouras, *SaR Resource Management based on Description Logics*. In Jobst Löffler and Markus Klann (eds), 1st Mobile Responses Workshop, Bonn, February 2007. Proceedings published as Vol. 4458, Lecture Notes in CS, Springer, Berlin/Heidelberg, 2007.

Stasinos Konstantopoulos, Georgios Paliouras and Symeon Chatzinotas, *SHARE-ODS: An Ontology Data Service for Search and Rescue Operations*. In: G. Antoniou, G. Potamias and C. Spyropoulos (eds), Proceedings of the 4th Hellenic Conference on AI, SETN 2006, Heraklion, Crete, Greece, May 18–20, Proceedings published as *Advances in Artificial Intelligence*, Lecture Notes in AI, Vol. 3955, Berlin: Springer, 2006. Extended version available as Technical Report DEMO-2006-1, NCSR ‘Demokritos’, January 2006.

John Nerbonne and Stasinos Konstantopoulos, *Phonotactics in Inductive Logic Programming*. In Mieczyslaw A. Klopotek, Slawomir T. Wierzchon, and Krzysztof Trojanowski (eds.) Intelligent Information Processing and Web Mining. Proceedings of the International IIS: IIPWM04 Conference held in Zakopane, Poland, May 17–20, 2004. Proceedings published as *Advances in Soft Computing*, Springer, Berlin, 2004.

Stasinos Konstantopoulos, *A Data-Parallel Version of Aleph*, Proceedings of Parallel and Distributed Computing for Machine Learning Workshop of the the 14th European Conference on Machine Learning. Cavtat, Croatia, 2003.

Stasinos Konstantopoulos, *BaseNP Chunking using ILP*. Tanja Gaustad (ed.), Computational Linguistics in the Netherlands: Selected Papers from the Thirteenth CLIN Meeting, Groningen, 2002. Proc. published as Vol. 47 of the Language and Computers series, Rodopi, Amsterdam/New York, 2003.

Stasinos Konstantopoulos, *Learning Phonotactics using ILP*, Proceedings of the 6th ESSLLI Student Session, Helsinki, 2001. Published as C. Striegnitz (ed.), *Special Issue of the WEB-SLS journal: The Language Sections of the ESSLLI-01 Student Session*.

John Nerbonne, Anja Belz, Nicola Cancedda, Alexander Clark, Hervé Déjean, James Hamerton, Rob Koeling, Stasinos Konstantopoulos, Miles Osborne, Franck Thollard, and Erik Tjong Kim Sang, *Learning Computational Grammars*, Proc. of Conference on Natural Language Learning, Toulouse, 2001

Stasinos Konstantopoulos, *NP chunking using ILP*, Proc. of Computational Linguistics in the Netherlands 1999, Utrecht, 2000

Where available, full text can be downloaded from <http://www.iit.demokritos.gr/~konstant/dload/Pubs/>