



CURRICULUM VITAE

Chrysafis (Takis) Hartonas

Personal Information

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Area of Specialization: Logic

Current Affiliation: Professor, Department of Computer Science & Engineering, University of Applied Sciences of Thessaly (TEI of Thessaly), 41110 Larissa, Greece

Academic Degrees

(1994) PhD (double PhD) Department of Philosophy, Department of Mathematics, Indiana University, Bloomington. Area of Specialization: Logic, Non-classical logics

(1990) MSc, Department of Philosophy, Indiana University, Bloomington

(1989) MSc, Department of Mathematics, Indiana University, Bloomington

(1983) DEA (Diplome d'Etudes Approfondies), Histoire des Sciences, EHESS, Centre Koyre, Paris, France

(1981) DEA (Diplome d'Etudes Approfondies), Sociologie, EHESS, Paris, France

(1978) Diplome in Architecture and Engineering, Aristotle University of Thessaloniki, Greece

Affiliations

(1998 – today) Professor, Department of Computer Science & Engineering, University of Applied Sciences of Thessaly (TEI of Thessaly), Greece

(1999) Teaching Associate, MSc in *Logic, Theory of Algorithms & Computation*, joint MSc program of the Universities of Athens and Patras, Greece

(2003 – today) Affiliated Academic Staff, Hellenic Open University, Department of Computer Science

(1996-1998) Research Fellow, University of Sussex, School of Cognitive & Computing Sciences (COGS), Theory of Computation Group

(1st Semester 1996) Honorary Research Fellow, University of Manchester, UK, Department of Computer Science, Theory and Formal Methods Group

(1994-1995) Research Associate, University of Leicester, Department of Mathematics and Computing, UK

Teaching Experience

Undergraduate: Logic, Theory of Computing, Theory of Algorithms, Logic Programming

Graduate: Artificial Intelligence, Ontological Engineering and Description Logics, Multi-agent Systems, Denotational Semantics for Programming Languages

Administrative Experience

(2014 – 2017) (TEI of Thessaly) Vice Rector, President of the Quality Assurance Unit, President of the Ethics Committee, President of the Life Long Learning Institute

(2017-today) President of the Erasmus Committee

(before 2013) Head of Department (2 years)

Professional services and distinctions

- PhD: I have earned a double Ph.D, in the Departments of Mathematics and of Philosophy at Indiana University
- Reviewing: American Mathematical Society (AMS) Reviewer. Review reports also submitted for a number of journals and conferences over the years, including *Order*, *Oxford Logic Journal of the IGPL*, *Journal of Philosophical Logic*, *Fundamenta Informatica*, *Annals of Pure and Applied Logic*, *Bulletin of the Section of Logic*, *Studia Logica*, *Journal of Logic, Language and Information*, *WOLLIC*, *CSL*, *Latin American Symposium on Mathematical Logic*, *Panhellenic Conference in Informatics*, *Advances in Modal Logic*
- Invited Talks: I have delivered invited talks to a number of departmental seminars in Mathematics, Computer Science and Philosophy departments, including *University of Toronto (Phil)*, *University of Pittsburgh (Phil)*, *University of Leicester (CS & Math)*, *University of Manchester (CS)*, *University of Sussex (CS)*, *University of Birmingham (CS)*, *University of Amsterdam (Logic Section)*, *University of Ioannina (Math)*, *University of Athens (Inter-departmental MSc program)* etc.

I have also been recently invited as a guest speaker at Workshops on *Relational semantics* ('3rd Workshop', University of Edmonton, CA, Philosophy) and *Unified Correspondence theory* (Lorenz Center, co-organized by the University of Amsterdam and Delft University, NL)

- Invited Contribution: I was invited to contribute a paper, now published in the special volume of the Springer-Verlag series *Outstanding Contributions in Logic*, in honor of J.Michael Dunn: "J. Michael Dunn on Information Based Logics"
- Conference Invitations: There have been several occasions over the years where I participated at conferences in Europe as an invited speaker, including *Logical Aspects of Negation*, *SSGRR*, *Numerical Analysis and Computer Science with Applications*, *IPSI*, *KGCM*

- Plenary Speaker: I have been invited and delivered an extended talk as a plenary speaker at the 7th Panhellenic Logic Symposium, held in Patras, Greece, in 2009
- Conference best paper award: I received a best paper award for my contribution “Modeling Service Communication with Open Petri Nets” to the South-East European Conference on Formal Methods and Computing, SEEFM 2007
- Conference Organizing: I have served as member of conference program committees for SEEFM, PCI (several occasions)
- Journal Editorial duties: I served as assistant editor, early on in my career, for the *Journal of Philosophical Logic*.

I was the founder and editor in chief of the journal *Annals of Mathematics, Computing & Teleinformatics*, published by the TEI of Thessaly for a number of years

Funded Research Programs

(2012-2015) ARCHIMEDES III. Funded by the EU and National Funds. Project Coordinator for the TEI of Thessaly.

(2006-2008) PerLA: Intelligent Personal Learning Assistants. Researcher, Research co-leader. Funded by the EU and National Funds (Archimedes II initiative)

(2005-2007) Towards an Integration of Process Algebraic and Petri Net Specifications of Agent Systems. Researcher, funded by the EU and National Funds (Pythagoras project, University of Athens)

(2004-2006) ProsAgent: Integration of the Holonic and Multi-agent System approaches to intelligent industrial process control. Project leader. Funded by the EU and National Funds (Archimedes I initiative)

(2001-2004) Formal Methods in the analysis of Intelligent Systems. Project leader. Funded by the TEI Thessaly Research Committee

(1996-1998) Denotational Semantics for Higher-Order Functional-Concurrent Languages, University of Sussex. Research Associate, University of Sussex, UK, EPSRC Project

(1st Semester 1996) Fixpoint Logics. Honorary Research Fellow, University of Manchester, UK

(1994-1995) Reasoning About Fairness in Concurrent Computation. Research Associate, University of Leicester, UK, EPSRC Project

Recent and Current Research Programs

Project Title: Kripke-Galois frame semantics for non-distributive substructural and modal logics

The main objective of the project has been to regain the semantics of operators familiar from a distributive setting, despite the absence of distribution. It is therefore also part of the project to revisit the theory of canonical extensions of ordered structures and re-establish a suitable semantic framework by combining with the ideas of Kripke-Galois semantics. The project is nearly completed.

Project Title: Modal Extensions of Orthomodular Quantum Logic

Much of the skepticism with working with Orthomodular Quantum Logic relies on (a) Goldblatt's proof on the intractability of orthomodularity and (b) the difficulties encountered with providing meaningful semantics to a number of modal operators of interest, e.g. epistemic, or epistemological (verifiability, falsifiability, or irrefutability).

Recent work (by this author) has re-examined point (a) above, proposing an interpretation which is identical to Goldblatt's but working with a subclass of frames where orthomodularity was demonstrated to be first-order definable.

The project aims to address issues of Modal, Dynamic and Fixpoint Orthomodular Quantum Logic, based on recent contributions, including this author's, on modal extensions of non-distributive propositional logics.

Publications

PhD Thesis

Chrysafis Hartonas, *Kripke-style semantics for Substructural Logics*, Indiana University, 1993

Books (in Greek)

1. Chrysafis Hartonas, *Basic Logic*, Ziti Publications, 2000
2. Chrysafis Hartonas, *Basic Computability Theory*, Ziti Publications, 2001
3. Chrysafis Hartonas, *Foundations & Semantics of Programming Languages – λ Calculi*, Ziti Publications, 2001

Submitted/In progress

4. Chrysafis Hartonas, Ewa Orłowska, Representation of Lattices with Possibility, Necessity, Sufficiency and Dual Sufficiency Operators (in progress)
5. 2017 (submitted) Chrysafis Hartonas, Canonical Extensions and Kripke-Galois semantics for non-distributive Propositional Logics
6. 2017 (submitted) Chrysafis Hartonas, Relational Representation of Operators in Canonical Extensions of Normal Lattice Expansions

Selected Journal and Conference publications

7. Chrysafis Hartonas, Kripke-Galois Frames and their Logics, The IFCoLog Journal of Logics and their Applications, International Federation of Computational Logic, 4:3 647-695, 2017
8. Chrysafis Hartonas, Order-Dual Relational Semantics for Non-Distributive Propositional Logics, Logic Journal of IGPL 25(2) 145-182, 2017
9. Chrysafis Hartonas, Order-Dual Relational Semantics for Non-Distributive Propositional Logics: A General Framework, J Philos Logic (2016). doi:10.1007/s10992-016-9417-7
10. Chrysafis Hartonas, First-Order Frames for Orthomodular Quantum Logic, Journal of Applied non-Classical Logics 26:1, 69-80, 2016

11. Chrysafis Hartonas, Modal and Temporal Extensions of Non-Distributive Propositional Logics, *Logic Journal of the IGPL* 24(2):156-185, 2016
12. Chrysafis Hartonas, Reasoning with Incomplete Information in Generalized Galois Logics without Distribution: The Case of Negation and Modal Operators, in Katalin Bimbo (ed), J. Michael Dunn on Information Based Logics, Springer-Verlag series Outstanding Contributions to Logic, 2016
13. Chrysafis Hartonas, On the Dynamic Logic of Agency and Action, *Studia Logica* 102(3):441-478, 2014
14. Chrysafis Hartonas, Reasoning about Types of Action and Agent Capabilities, *Logic Journal of IGPL* 21(5):703-742, 2013
15. Maria Tsiakmaki, Chrysafis Hartonas, Implementing the CROP Reference Architecture: The CROP Learning Service, 19th Panhellenic Conference on Informatics (pp. 55--56)., At Athens, Greece, 2015
16. Agathoklis Kritsimallis, Chrysafis Hartonas: Tableaux for type PDL. *BCI* 2013: 39-46
17. Maria Tsiakmaki, Chrysafis Hartonas: Implementing the CROP Reference Architecture: The CROP Learning Object Editor. *Proceedings BCI* 2013: 72
18. Chrysafis Hartonas, Eleni Gana, Learning Objects and Learning Services in the Semantic Web. *Proceedings ICAIT* pp 584-586, 2008
19. Chrysafis Hartonas, Eleni Gana, Adaptivity for Knowledge Content in the Semantic Web. *Proceedings KGCM'08*, 2008
20. Chrysafis Hartonas, A Combined Open Petri Net and Process Algebraic Approach to Message-Passing Services, In proceeding SEEFM07-3rd South-East European Workshop on Formal Methods (SEEFM), 2007
21. Chrysafis Hartonas, Modeling Service Communication with Open Petri Nets, In proceedings SEEFM07- South-East European Workshop on Formal Methods (SEEFM), 2007
22. Chrysafis Hartonas, D. Kodokostas, K. Kokkinos, Petri Net semantics for communicating agents, *Annals of Mathematics, Computing & Teleinformatics*, Ziti Publications, vol 1(4): 31-39, 2006
23. Chrysafis Hartonas, Matthew Hennessy, Full abstractness for a functional/concurrent language with higher-order value-passing, *Information and Computation* 04/'06; 145(1):239-254, 1998
24. Chrysafis Hartonas, Duality for Modal μ -Logics, *Theoretical Computer Science* 202(1-2):193-222,1998
25. Chrysafis Hartonas, Matthew Hennessy, Full abstractness for a functional/concurrent language with higher-order value-passing, *Proceedings CSL'97*, 239-254, 1997
26. Chrysafis Hartonas, A fixpoint approach to finite delay and fairness, *Theoretical Computer Science* 198(1-2):131-158, 1997
27. Chrysafis Hartonas, Semantics for finite delay, *Theoretical Computer Science* 176(1):205-234, 1997
28. Chrysafis Hartonas, An algebraic theory of structured objects, *Notre Dame Journal of Formal Logic* 38(1):65-80, 1997
29. Chrysafis Hartonas, Pretopology semantics for bimodal intuitionistic linear logic, *Logic journal of the IGPL* 5(1):65-78, 1997

30. Chrysafis Hartonas, J. Michael Dunn, Stone duality for lattices, *Algebra Universalis* 37(3):391-401, 1997
31. Chrysafis Hartonas, Duality for lattice-ordered algebras and for normal algebraizable logics, *Studia Logica* 58(3):403-450, 1997
32. Chrysafis Hartonas, Order-duality, negation and lattice representation, in H. Wansing (ed) *Negation: A Notion in Focus*, De Gruyter, Berlin, 27-36, 1996
33. Jon Barwise, Dov Gabbay, Chrysafis Hartonas, On the logic of information flow, *Logic journal of the IGPL* 3(1):7-49, 1995
34. Jon Barwise, Dov Gabbay, Chrysafis Hartonas, Information Flow and the Lambek Calculus, in J. Seligman and D. Westerstahl (eds), *Logic, Language and Computation: The 1994 Moraga Proceedings*, CSLI Stanford Publications, 1994
35. Chrysafis Hartonas, M.Z. Kwiatkowska, Synchronization trees and fairness, in proceedings *Theory and Formal Methods '94*, 181-198, 1994