

# Curriculum Vitae

George Rahonis

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**Date and Place of Birth:** 21/11/1965, Thessaloniki

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## Research Interests

Automata theory, Logic, Formal verification, Computational disease models

## Education

- 8/7/87: Diploma in Mathematics, Department of Mathematics, Aristotle University of Thessaloniki.
- 20/12/93: Doctorate in Mathematics ("*Sheaves of forests*", Supervisor: Symeon Bozopalidis), Department of Mathematics, Aristotle University of Thessaloniki.

## Scholarships

11/1999--12/2000 post-doc scholarship of the "National State Scholarship of Greece".

## Career / Employment

- 1994--1998: Computer Science Lecturer at *EL.KE.PA.*
- 1998--2002: Computer Science Lecturer at *National Center for Public Administration.*
- 1/9/1995--9/10/2002: Computer Science teacher at *Secondary Education.*

- 20/3/2001--31/8/2001 and 10/12/2001-31/8/2002: Lecturer in the framework P.D.407/80 at the *Department of Mathematics, Aristotle University of Thessaloniki*.
- 27/9/2002--30/9/2008: Lecturer at the *Department of Mathematics, Aristotle University of Thessaloniki*.
- 1/10/2008—24/6/2013: Assistant Professor at the *Department of Mathematics, Aristotle University of Thessaloniki*.
- 25/6/2013—27/6/2018: Associate Professor at the *Department of Mathematics, Aristotle University of Thessaloniki*.
- 28/6/2018—Today: Professor at the *Department of Mathematics, Aristotle University of Thessaloniki*.

### **Participant in projects**

- “*Immunocomputing*” (IST-2000-26016) 12/2001--12/2003.
- “*Quantitative models for automata on trees, pictures and words*” in the framework of the 1<sup>st</sup> phase of the *Greek-German Bilateral Cooperation*”.
- *LogicGuard I: “The Efficient Checking of Time-Quantified Logic Formulas with Applications in Computer Security”* 01/2012—12/2013.
- *LogicGuard II: “The Optimized Checking of Time-Quantified Logic Formulas with Applications in Computer Security”* 10/2014—09/2016.
- *COST Action IC1405 “Reversible computation – extending horizons of computing”* 4/2015—9/2018.
- *COST Action CA15120 Open Multiscale Systems Medicine (OpenMultiMed)* 4/2016—4/2020.
- *ELIDEK 95038 (Principal investigator)*
- *ELIDEK 99323 (Principal investigator)*

### **Publications**

- Symeon Bozapalidis and George Rahonis, On two families of forests, *Acta Informatica* 31:235-260, 1994, doi:10.1007/BF01218405.
- Kai Salomaa and George Rahonis, Hierarchies of synchronized and algebraic forests, in: *Proceedings of DLT 1997, Aristotle University of Thessaloniki, Thessaloniki 1997*, pp. 447-460.

- Kai Salomaa and George Rahonis, On the size of stack and synchronization alphabets of tree automata, *Fundamenta Informaticae* 36:57-69, 1998, doi:10.3233/FI-1998-3613.
- Symeon Bozapalidis and George Rahonis, H tree schemes with finite and recognizable sets of rules, *Romanian Journal of Information Science and Technology* 4:307-318, 1998, doi:10.3217/jucs-005-09-0599.
- George Rahonis, Splicing on trees: The iterated case, *Journal of Universal Computer Science* 5:599-609, 1999.
- George Rahonis, Alphabetic and synchronized tree transducers, *Theoretical Computer Science* 255:377-399, 2001, doi:10.1016/S0304-3975(99)00296-0.
- George Rahonis, Alphabetic pushdown tree transducers, in: *Proceedings of DLT'03, Lecture Notes in Computer Science* 2710:423-436, 2003, doi:10.1007/3-540-45007-6\_34.
- George Rahonis, DNA tree structures, in: *Grammars and Automata for String Processing: From Mathematics and Computer Science to Biology, and Back* (C. Martin-Vide and V. Mitrana eds.), Taylor and Francis, London, 2003, pp.413-422, doi:10.1201/9780203009642.ch40.
- George Rahonis, Infinite fuzzy computations, *Fuzzy Sets and Systems* 153:275-288, 2005, doi:10.1016/j.fss.2004.12.003.
- Symeon Bozapalidis and George Rahonis, On the closure of recognizable tree series under tree homomorphisms, *Journal of Automata, Languages and Combinatorics* 10:185-202, 2005, doi:10.25596/jalc-2005-185.
- Werner Kuich and George Rahonis, Fuzzy regular languages over finite and infinite words, *Fuzzy Sets and Systems* 157:1532-1549, 2006, doi:10.1016/j.fss.2006.02.004.
- Manfred Droste and George Rahonis, Weighted automata and weighted logics over infinite words, in: *Proceedings of DLT 06, Lecture Notes in Computer Science* 4036:49-58, 2006, doi:10.1007/11779148\_6.
- George Rahonis, Weighted Muller tree automata and weighted logics, *Journal of Automata Languages and Combinatorics* 12:455-483, 2007, doi:10.25596/jalc-2007-455.
- Manfred Droste and George Rahonis, Weighted automata and weighted logics with discounting, in: *Proceedings of CIAA 2007, Lecture Notes in Computer Science* 4783:73-84, 2007, doi:10.1007/978-3-540-76336-9\_9.
- Manfred Droste, Werner Kuich, and George Rahonis, Multi-valued MSO logics over words and trees, *Fundamenta Informaticae* 84:305-327, 2008.

- George Rahonis, Fuzzy languages, in: Handbook of Weighted Automata (M. Droste, W. Kuich, and H. Vogler, eds.), EATCS Monographs in Theoretical Computer Science, Springer, 2009, pp.481-517, doi:10.1007/978-3-642-01492-5\_12.
- Manfred Droste and George Rahonis, Weighted automata and weighted logics with discounting, Theoretical Computer Science 410:3481-3494, 2009, doi:10.1016/j.tcs.2009.03.029.
- Eleni Mandrali and George Rahonis, Recognizable tree series with discounting, Acta Cybernetica 19:411-439, 2009.
- George Rahonis, Weighted extended temporal logic with discounting, manuscript, presented at: Workshop on Quantitative Logics QUANTLOG 2009, Satellite event of the ICALP 2009.
- Manfred Droste and George Rahonis, Weighted automata and weighted logics over infinite words, Russian Mathematics 54:26-45, 2010, and in Russian: Izvestiya Vysshikh Uchebnykh Zavedenii. Matematika (Iz. VUZ) 1:34-58, 2010, doi:10.3103/S1066369X10010044.
- Symeon Bozapalidis, Zoltán Fülöp, and George Rahonis, Equational tree transformations, Theoretical Computer Science 412:3676-3692, 2011, doi:10.1016/j.tcs.2011.03.028.
- Irini-Eleftheria Mens and George Rahonis, Variable tree automata over infinite ranked alphabets, in: Proceedings of CAI 2011, Lecture Notes in Computer Science 6742:247-260, 2011, doi:10.1007/978-3-642-21493-6\_16.
- Zoltán Fülöp and George Rahonis, Equational weighted tree transformations with discounting, in: Bozapalidis Festschrift Algebraic Foundations in Computer Science, Lecture Notes in Computer Science 7020:112-145, 2011, doi:10.1007/978-3-642-24897-9.
- Symeon Bozapalidis, Zoltán Fülöp, and George Rahonis, Equational weighted tree transformations, Acta Informatica 49:29-52, 2012, doi:10.1007/s00236-011-0148-5.
- Eleni Mandrali and George Rahonis, Characterizations of weighted first-order logics over semirings, in: Proceedings of CAI 2013, Lecture Notes in Computer Science 8080:247-259, 2013, doi:10.1007/978-3-642-40663-8\_23.
- Symeon Bozapalidis and George Rahonis, Stochastic equationality, in: Proceedings of CAI 2013, Lecture Notes in Computer Science 8080:173-185, 2013, doi:10.1007/978-3-642-40663-8\_17.
- Eleni Mandrali and George Rahonis, On weighted first-order logics with discounting, Acta Informatica 51:61-106, 2014, doi:10.1007/s00236-013-0193-3.

- Maria Pittou and George Rahonis, Weighted variable automata over infinite alphabets, in: Proceedings of CIAA 2014, Lecture Notes in Computer Science 8587:304-317, 2014, doi:10.1007/978-3-319-08846-4\_23.
- Eleni Mandrali and George Rahonis, Weighted first-order logics over semirings, Acta Cybernetica 22:435-483, 2015, doi:10.14232/actacyb.22.2.2015.13.
- Temur Kutsia, George Rahonis and Wolfgang Schreiner, MK-fuzzy automata, Research Institute for Symbolic Computation (RISC), Johannes Kepler University, Linz, Austria. Technical report, May 2016.
- Manfred Droste and George Rahonis, Weighted linear dynamic logic, in: Proceedings of GandALF 2016, Electronic Proceedings in Theoretical Computer Science 226:149-163, 2016, doi:10.4204/EPTCS.226.11.
- Symeon Bozapalidis and George Rahonis, Stochastic semantics, Fundamenta Informaticae 150(2):143-177, 2017, doi:10.3233/FI-2017-1463.
- Maria Pittou and George Rahonis, Weighted recognizability over infinite alphabets, Acta Cybernetica, 23: 283-317, 2017, doi:10.14232/actacyb.23.1.2017.16.
- Paulina Paraponiari and George Rahonis, On weighted configuration logics, in: Proceedings of FACS 2017, Lecture Notes in Computer Science 10487:98-116, 2017, doi:10.1007/978-3-319-68034-7\_6.
- Manfred Droste, Temur Kutsia, George Rahonis and Wolfgang Schreiner, MK-fuzzy automata and MSO logics, in: Proceedings of GandALF 2017, Electronic Proceedings in Theoretical Computer Science 256:106-120, 2017, doi:10.4204/EPTCS.256.8.
- George Rahonis and Faidra Torpari, Weighted context-free grammars over bimonoids, Scientific Annals of Computer Science 29(1):59-80, 2019, doi:10.7561/SACS.2019.1.59.
- Manfred Droste, Temur Kutsia, George Rahonis and Wolfgang Schreiner, MK-fuzzy automata and MSO logics, Information and Computation 272, 2020, doi:10.1016/j.ic.2019.104499.
- Maria Pittou and George Rahonis, Architecture modelling of parametric component-based systems, in: Proceedings of COORDINATION 2020, Lecture Notes in Computer Science 12134:281-300, 2020, doi:10.1007/978-3-030-50029-0\_18.
- Maria Pittou and George Rahonis, Architecture modelling of parametric component-based systems: Qualitative and quantitative modelling, Logical Methods in Computer Science 17(4), 2021, 26:1-26:53, doi:10.46298/lmcs-17(4:26)2021.
- Paulina Paraponiari and George Rahonis, Weighted propositional configuration logics: A specification language for architectures with quantitative features, Information and Computation 282, 2022, doi:10.1016/j.ic.2020.104647.
- Maria Pittou and George Rahonis, Modelling uncertainty in architectures of parametric component-based systems, International Journal of Foundations of

Computer Science, International Journal of Foundations of Computer Science 34(6): 559-601, 2023, doi:10.1142/S0129054123450028.

- Manfred Droste, Gustav Grabolle and George Rahonis, Weighted linear dynamic logic, International Journal of Foundations of Computer Science 35(1&2): 145-177, 2024, doi: 10.1142/S0129054123480088

## **Editor**

- Symeon Bozapalidis, Antonios Kalampakas and George Rahonis editors, *Proceedings of the Conference on Algebraic Informatics (CAI 2005)*, Thessaloniki 2005.
- Symeon Bozapalidis and George Rahonis editors, *Proceedings of the 2<sup>nd</sup> International Conference on Algebraic Informatics (CAI 2007)* Lecture Notes in Computer Science 4728, Springer 2007.
- Symeon Bozapalidis and George Rahonis editors, *Proceedings of the 3<sup>rd</sup> International Conference on Algebraic Informatics (CAI 2009)* Lecture Notes in Computer Science 5725, Springer 2009.
- Werner Kuich and George Rahonis editors, *Bozapalidis Festschrift, Algebraic Foundations in Computer Science* Lecture Notes in Computer Science 7020, Springer 2011.
- Manfred Droste, George Rahonis and Arto Salomaa editors, International Journal of Foundations of Computer Science, Special Issue dedicated to *International Colloquium (RAQM 2021)*, volume 34, issue 06, September 2023.
- Dimitrios Poulakis and George Rahonis, *Proceedings of the 9<sup>th</sup> International Conference on Algebraic Informatics (CAI 2022)* Lecture Notes in Computer Science 13706, Springer 2022
- Zoltan Fulop, George Rahonis, Kai Salomaa editors, International Journal of Foundations of Computer Science, Special Issue dedicated to *Magnus Steinby* 35(1&2), 2024.
- Dimitrios Poulakis and George Rahonis editors, Information and Computation, Special Issue dedicated to the *9<sup>th</sup> International Conference on Algebraic Informatics (CAI 2022)* (in preparation).

## **Invited Speaker at Conferences**

- *Weighted automata: Theory and Applications (WATA 2006)*, Leipzig, Germany, March 27-31, 2006.

- *Weighted automata: Theory and Applications* (WATA 2008), Dresden, Germany, May 13-18, 2008.
- *International Colloquium Recent Advances of Quantitative Modes in Computer Science* (RAQM 2021), online, June 22-23, 2021.

### **Member of Conference Program Committees**

- 4<sup>th</sup> International *Conference on Algebraic Informatics* (CAI 2011), Hagenberg/ Linz, Austria, June 21-24, 2011.
- 5<sup>th</sup> International *Conference on Algebraic Informatics* (CAI 2013), IGESA, Porquerolles Island, France, September 3-6, 2013.
- 6<sup>th</sup> International *Conference on Algebraic Informatics* (CAI 2015), Stuttgart, Germany, September 1-4, 2015.
- The 2015 International Conference on *Fuzzy System and Data Mining* (FSDM 2015), Shanghai, China, December 12-15, 2015.
- The 2016 International Conference on *Fuzzy System and Data Mining* (FSDM 2016), Macau, China, December 11-14, 2016.
- The 2017 International Conference on *Fuzzy System and Data Mining* (FSDM 2017), Hualien, Taiwan, November 24-27, 2017.
- 20<sup>th</sup> International Conference on *Descriptive Complexity on Formal Systems* (DCFS 2018), Halifax, Canada, July 25-27, 2018.
- 8<sup>th</sup> International *Conference on Algebraic Informatics* (CAI 2019), Nis, Serbia, June 30 – July 4, 2019
- 9<sup>th</sup> International *Conference on Algebraic Informatics* (CAI 2022), online, October 27 –29, 2022 (co-chair).

### **Member of Conference Organizing Committees**

- 1<sup>st</sup> International *Conference on Algebraic Informatics* (CAI 2005), Thessaloniki, October 20-23, 2005.
- 2<sup>nd</sup> International *Conference on Algebraic Informatics* (CAI 2007), Thessaloniki, May 21-25, 2007 (Co-chair).
- 3<sup>rd</sup> International *Conference on Algebraic Informatics* (CAI 2009), Thessaloniki, May 19-22, 2009 (Chair).
- *Workshop on Quantitative Logics* (QUANTLOG 2009), Rhodes, July 11, 2009 (Co-chair), *Satellite event of the ICALP 2009*.
- *Workshop on Algebraic Foundations in Computer Science*, Thessaloniki, November 7-8, 2011 (Chair).

- *European Joint Conferences on Theory and Practice of Software (ETAPS 2018)*, Thessaloniki April 14-22, 2018.
- *9<sup>th</sup> International Conference on Algebraic Informatics (CAI 2022)*, online, October 27 -29, 2022 (co-chair).

## **Journal Referee**

Fundamenta Informaticae, Fuzzy Sets and Systems, IEEE Transactions on Fuzzy Systems, Information and Computation, Information Sciences, International Journal of Foundations of Computer Science, Journal of Automata, Languages and Combinatorics, Journal of Computer Science and Technology, Soft Computing, Theoretical Computer Science.

## **Conference Referee**

FCT'93, DLT'97, FCT'99, DLT 2003, AFL 2005, CAI05, FoSSaCS 2007, LATA 2007, CAI 2007, FCT 2007, LATA 2008, ICALP 2008, CAI 2009, QUANTLOG 2009, AFL 2011, CSL 2011, LATA 2011, CAI 2011, CAI 2013, CSR 2014, AFL 2014, LATA 2016, MFCS 2020.

## **Member of Organizations**

European Association for Theoretical Computer Science (EATCS).

Russian Chapter of European Association for Theoretical Computer Science (EATCS).

## **PhD students**

Leonidas Efstathiadis

Paulina Paraponiari

Dimitra Ralli

Faidra Torpari

## **Post Doc student**

Paul Marantidis

Maria Pittou



## **Former PhD and Post Doc student**

Eleni Mandral

## **M.S. Thesis Supervisor for**

Sofia Papapostolou (2006), George Serifis (2008), Stergios Intzes (2008), Europi Toulkeridou (2008), Eleni Mandrali (2008), Anastasia Siagka (2008), Theodosios Melidis (2009), Maria Tzitzili (2009), Anna Karyda (2010), Sotiria Demiroudi (2011) Irini Eleftheria Mens (2011), Eleni Maria Vretta (2011), Grigoris Christidis (2012), Christos Orlis (2012), Marianna Dermentzi (2013), Christina Tsostou (2013), Persefoni Katrana (2013), Antonios Gouglidis (2014), Maria Pittou (2014), Evi Stefanidou (2014), Eleni Michalaku (2014), Chrysa Mavridou (2014), Pavlos Marantidis (2014), Panagiota Toupa (2015), Maria Gkrana (2015), Despoina Serafeim (2015), Penelope Dimitriou (2015), Lina Gidari (2015), Alexandra Kokkaleniou (2016), Dimitrios Terzopoulos (2016), Paulina Paraponiari (2017), Dimitra Ralli (2018), Faidra Torpari (2018), Alexandros Vasileiadis (2019), George Papanikolaou (2019), Paschalis Charalambous (2020), Vagia Karioti (2020), Georgios Koutsogoulas (2021), Christina Fountoukidou (2021), Leonidas Eustathiadis (2022), George Gkoutis, Katerina Kolokythopoulou (2022), Melina Soula (2023), Christos Menexes (2023), Georgios Moustakas.