

## 1 Current position

I'm a Full Professor in Computer Science at University of Calabria, Italy since December 30th 2018. I've been also conferred the Italian National Abilitation title for covering the position of Full Professor in the "Information Processing Systems" discipline in the Italian academy (valid up to March 2024).

## 2 Short Résumé

- **Journal Papers and editorial activities.** I've published more than 20 articles on international journals, including Artificial Intelligence [22, 16], ACM Transactions on Computational Logic [21, 14], Theory and Practice of Logic Programming [6, 5, 7, 10, 11], IEEE Transactions on Computational Intelligence and AI in Games [9], Theoretical Computer Science [20], Computer Languages [24], Journal of Logic and Computation [15], AI Communications [23, 19, 13], Annals of Mathematics and Artificial Intelligence [18, 17]. I was co-editor of the 13th Reasoning Web Summer School Tutorial Lectures [2], of the LPNMR 2015 Proceedings [3], and of JELIA 2002 Proceedings [4].
- **Conference Papers.** I've published at international venues like IJCAI, AAAI, PODS, SIGMOD, ICLP, ISWC, ESWC, LPAR, WWW, LPNMR.
- **Awards.** My conference paper presented at ICLP 2008 [50] won the Test of Time Award 2018. My journal paper on Artificial Intelligence [16] won the Prominent Paper Award 2013 and the KR 2022 Test of Time Award. Best paper at PAI 2013 [87]. Best paper, selected for presentation at IJCAI 2011, at LPNMR 2011 [39]. Best paper award at ESWC 2006 [63]. Best implementation paper at ASP03 [75]. In the Italian Research Quality Evaluation (publishing window 2011-2014) my two submitted papers were ranked "1" (top-class). In the Italian Research Quality Evaluation (publishing window 2004-2010) all my three submitted papers were ranked "A" (top-class). My submitted publication in the Italian Research Quality Evaluation (publishing window 2001-2003) was ranked "excellent" (top-class) [22].
- **Bibliometric Impact (August 2022 data)**<sup>1</sup>. My h-index on the Scopus Database is 19 (with 1955 citations); my h-index on Google Scholar is 30 (with 3880 citations);
- **Organizational Activities.** I've been Director of the Laboratory for Artificial Intelligence Applications (LAIA) at University of Calabria from 2012 to 2015. I was co-chair of the 13-th Reasoning Web Summer School in 2017. I was co-chair of the program committee of LPNMR 2015. I was co-chair of the third and fourth Answer Set Programming Competition (2011,2013), and member of the ASP-Core-2 Standardization Working Group. I was local organizing co-chair of JELIA 2002 and LPNMR 2005. I was track chair at ICLP 2019, ESWC 2012 and at RuleML 2011. I was Senior Program Committee Member at IJCAI 2016. I was member of several international

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<sup>1</sup>As I'm fully aware of the intrinsic limits of evaluating the quality of a scientist using bibliometric tools, these data are given for informative purposes only.

conferences committee, such as IJCAI, AAAI, ECAI, KR, ISWC, ESWC, LPNMR, NMR.

- **Institutional Activities.** From February 2014 to May 2017, I've been Rectoral Delegate to the Campus Networking Services, and member of the University ICT Center Technical Scientific Committee. In this role I was in charge of steering and managing the campus security policy, and the network maintainance and evolution. Since March 2017, I was President of the University ICT Center Technical Scientific Committee for the three year term 2017-2019, and from May 2017 to May 2019, I was Rectoral Delegate for relationships with the CINECA Consortium (CINECA is the italyan university consortium which develops nation-wide adopted software for Universities). The University of Calabria ICT Center is the Campus structure, with about 30 employees, which is in charge of steering and implementing all what concerns digital policies and which drives the transition to digital instruments in the campus. From April 2018 to May 2019, I was member of the CINECA Assembly Coordination Board, a selected committee instructing CINECA plenary assembly decisions.
- **Research Interests.** My core research interests fit in the Knowledge Representation area. I've been particularly interested in Answer Set Programming, Hybrid knowledge representation paradigms, Semantic Web and related technologies. In the wider picture of the stream reasoning field, I've been recently interested in Artificial Intelligence for videogames, particularly focussing on the challenging idea of embedding reasoning modules in real-time videogames. Our artificial player participating in the Angry Birds AI Competition [9] is one of the outcomes of this line of research, the other being our ThinkEngine plugin for Unity [27]. I worked in the past on computational complexity, data mining and machine learning techniques, and did some work on e-learning and information extraction from bibliometric sources. I personally maintain the bibliometric tool called Scholar H-Index Calculator [35, 98].
- **Highlights of research projects and technological transfer activities.** I'm currently scientific responsible of three infrastructural projects funded, for a grand total of about 6 MEUR, under the 2014-2020 FESR/FSE program and respectively regarding the deployment of a new Tier-3 university data center, the deployment of a campus-wide wireless coverage, and the deployment of a new cloud infrastructure for University of Calabria. From 2012 to 2015, I've been director and scientific responsible of the Laboratory for Applications of Artificial Intelligence funded under the SILA project (FESR/FSE 2007-2013). I'm collaborator of the university spin-off company DLVSystem s.r.l., which develops the DLV answer set solver. I also participate in the development of the *dlvhx* system since its inception during the "Answer Set Programming for the Semantic Web" project conducted at the Technical University of Vienna (funded by Austrian Science Funds (FWF) under project number P17212), and in the context of further projects in which I've been research unit lead. I was project manager of the EU project INFOMIX (FP5-IST-2001-33570).
- **Teaching activities.** I teach the courses of "Foundations of Computer Networks and Security" and "Operating Systems" and "Network Security" in the Bachelor and

M.Sc. curricula in Computer Science at University of Calabria. I've been teacher and tutor in several divulgative events about Answer Set Programming, like the Autumn School on Logic Programming (2019), the Reasoning Web Summer School (2006, 2008 and 2009), or the ASP tutorials at ESWC 2006 and ISTC 2007.

- **Student supervision.** I've supervised so far more than one hundred Bachelor and Master theses for the curriculum in Computer Science at University of Calabria. I've supervised several Ph.D. fellows: Dr. Alessandra Martello, with a dissertation on “Towards grounding Semantic Web to Answer Set Programming”, 2010; Dr. Marco Marano, with a dissertation on “Heterogenous Knowledge Representation formalisms in the Semantic Web”, 2011; Dr. Stefano Germano, with a dissertation on “Logic programming in non-conventional environments”, 2017; Denise Angilica, “Tight integration of Artificial Intelligence in Game Development Tools”, 2020; and Francesco Pacenza, with a dissertation on “Reasoning in Highly Reactive Environments”, 2021.
- **Fellowships.** I was Visiting Researcher at the Technical University of Vienna from 2004 to 2006. In 2006, I taught the “Selected Topics in AI” course at the same institution.



## List of all Publications

### Volumes

- [1] Bart Bogaerts, Esra Erdem, Paul Fodor, Andrea Formisano, Giovambattista Ianni, Daniela Inclezan, Germán Vidal, Alicia Villanueva, Marina De Vos, and Fangkai Yang (Eds.) *35th International Conference on Logic Programming, ICLP 2019, Las Cruces, NM, USA, September 20-25, 2019, Technical Communications and Doctoral Consortium papers*. Vol. 306. EPTCS. 2019. DOI: 10.4204/EPTCS.TBA.
- [2] Giovambattista Ianni, Domenico Lembo, Leopoldo Bertossi, Wolfgang Faber, Birte Glimm, Georg Gottlob, and Steffen Staab (Eds.) *Reasoning Web, Semantic Interoperability on the Web, 13th International Summer School 2017, London, UK, July 7-11, 2017, Tutorial Lectures*. Vol. 10370. Lecture Notes in Computer Science. Springer, 2017. ISBN: 978-3-319-61032-0.
- [3] Francesco Calimeri, Giovambattista Ianni, and Miroslaw Truszcynski (Eds.) *Logic Programming and Nonmonotonic Reasoning - 13th International Conference, LPNMR 2015, Lexington, KY, USA, September 27-30, 2015. Proceedings*. Vol. 9345. Lecture Notes in Computer Science. Springer, 2015. ISBN: 978-3-319-23263-8. DOI: 10.1007/978-3-319-23264-5.
- [4] Sergio Flesca, Sergio Greco, Nicola Leone, and Giovambattista Ianni (Eds.) *Logics in Artificial Intelligence, European Conference, JELIA 2002, Cosenza, Italy, September, 23-26, Proceedings*. Vol. 2424. Lecture Notes in Computer Science. Springer, 2002. ISBN: 3-540-44190-5.

### Journal Papers

- [5] Francesco Calimeri, Wolfgang Faber, Martin Gebser, Giovambattista Ianni, Roland Kaminski, Thomas Krennwallner, Nicola Leone, Marco Maratea, Francesco Ricca, and Torsten Schaub. “ASP-Core-2 Input Language Format”. In: *Theory Pract. Log. Program.* 20.2 (2020), pp. 294–309. DOI: 10.1017/S1471068419000450. URL: <https://doi.org/10.1017/S1471068419000450>.
- [6] Giovambattista Ianni, Francesco Pacenza, and Jessica Zangari. “Incremental maintenance of overgrounded logic programs with tailored simplifications”. In: *Theory and Practice of Logic Programming* 20.5 (2020), pp. 719–734. DOI: 10.1017/S147106842000040X.
- [7] Francesco Calimeri, Giovambattista Ianni, Francesco Pacenza, Simona Perri, and Jessica Zangari. “Incremental Answer Set Programming with Overgrounding”. In: *Theory and Practice of Logic Programming* 19.5-6 (2019), pp. 957–973. DOI: 10.1017/S1471068419000292.

- [8] Thomas Eiter, Stefano Germano, Giovambattista Ianni, Tobias Kaminski, Christoph Redl, Peter Schüller, and Antonius Weinzierl. “The DLVHEX System”. In: *KI - Kuenstliche Intelligenz* 32.2-3 (2018), pp. 187–189. ISSN: 1610-1987. DOI: 10.1007/s13218-018-0535-y.
- [9] Francesco Calimeri, Michael Fink, Stefano Germano, Andreas Humenberger, Giovambattista Ianni, Christoph Redl, Dasha Stepanova, Andrea Tucci, and Anton Wimmer. “Angry-HEX: an Artificial Player for Angry Birds Based on Declarative Knowledge Bases”. In: *IEEE Trans. Comput. Intellig. and AI in Games* 8.2 (2016), pp. 128–139. DOI: <http://dx.doi.org/10.1109/TCIAIG.2015.2509600>.
- [10] Thomas Eiter, Michael Fink, Giovambattista Ianni, Thomas Krennwallner, Christoph Redl, and Peter Schüller. “A model building framework for answer set programming with external computations”. In: *TPLP* 16.4 (2016), pp. 418–464. DOI: 10.1017/S1471068415000113.
- [11] Francesco Calimeri, Giovambattista Ianni, and Francesco Ricca. “The Third Open Answer Set Programming Competition”. In: *Theory and Practice of Logic Programming* 14.1 (2014), pp. 117–135. DOI: 10.1017/S1471068412000105.
- [12] Thomas Eiter, Michael Fink, Giovambattista Ianni, and Peter Schueller. “The IMPL Policy Language for Managing Inconsistency in Multi-Context Systems”. In: *Applications of Declarative Programming and Knowledge Management. Revised Selected papers of INAP/WLP2011 (19th International Conference on Applications of Declarative Programming and Knowledge Management and 25th Workshop on Logic Programming)*. Vol. LNCS 7773. Springer, 2013, pp. 3–26. ISBN: 978-3-642-41523-4. DOI: 10.1007/978-3-642-41524-1\_1.
- [13] Francesco Calimeri, Susanna Cozza, Giovambattista Ianni, and Nicola Leone. “Finitely Recursive Programs: Decidability and Bottom-up Computation”. In: *AI Communications* 24 (2011), pp. 311–334. DOI: 10.3233/AIC-2011-0509.
- [14] Thomas Eiter, Giovambattista Ianni, Thomas Lukasiewicz, and Roman Schindlauer. “Well-founded semantics for description logic programs in the semantic web”. In: *ACM Trans. Comput. Log.* 12.2 (2011), 11:1–11:41. DOI: 10.1145/1877714.1877717.
- [15] Giovambattista Ianni, Alessandra Martello, Claudio Panetta, and Giorgio Terracina. “Efficiently querying RDF(S) ontologies with Answer Set Programming”. In: *Journal of Logic and Computation* 19.4 (2009), pp. 671–695. DOI: 10.1093/logcom/exn043.
- [16] Thomas Eiter, Giovambattista Ianni, Thomas Lukasiewicz, Roman Schindlauer, and Hans Tompits. “Combining answer set programming with description logics for the Semantic Web”. In: *Artificial Intelligence. Elsevier Science. Amsterdam. Olanda* 172.12-13 (2008), pp. 1495–1539. ISSN: 0004-3702. DOI: 10.1016/j.artint.2008.04.002.
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- [18] Francesco Calimeri, Susanna Cozza, and Giovambattista Ianni. “External sources of knowledge and value invention in logic programming”. In: *Annals of Mathematics and Artificial Intelligence. Springer Netherlands, Amsterdan, Olanda* 50.3-4 (2007), pp. 333–361. ISSN: 1012-2443. DOI: 10.1007/s10472-007-9076-z.
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- [20] Fabrizio Angiulli, Luigi Palopoli, and Giovambattista Ianni. “On the complexity of inducing categorical and quantitative association rules”. In: *Theoretical Computer Science. Elsevier Science, Amsterdan, Olanda* 314.1-2 (2004). Ed. by Elsevier Science, pp. 217–249.
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- [22] Rachel Ben-Eliyahu-Zohary, Ehud Gudes, and Giovambattista Ianni. “Metaqueries: Semantics, Complexity, and Efficient Algorithms”. In: *Artificial Intelligence. Elsevier Science. Amsterdan. Olanda* 149.1 (2003), pp. 61–87.
- [23] Giovambattista Ianni. “Intelligent Anticipated Exploration of Web Sites”. In: *AI Communications. IOS Press, Amsterdan, Olanda* 14.4 (2001), pp. 197–214.
- [24] Marco Cadoli, Giovambattista Ianni, Luigi Palopoli, Andrea Schaerf, and Domenico Vasile. “NP-SPEC: an executable specification language for solving all problems in NP”. In: *Computer languages. Elsevier Science. Amsterdan, Olanda.* 26.2-4 (2000), pp. 165–195. DOI: 10.1016/S0096-0551(01)00010-8.

## Book chapters and other parts of books

- [25] Mario Alviano, Francesco Calimeri, Giovambattista Ianni, Wolfgang Faber, and Nicola Leone. “Function Symbols in ASP: Overview and Perspectives”. In: *Nonmonotonic Reasoning. Essays Celebrating its 30th Anniversary.* Ed. by Gerd Brewka, Victor Marek, and Mirosław Truszczyński. London, UK: College Publications, 2011, pp. 1–23. ISBN: 978-1-84890-042-4.
- [26] Woltran Drabent, Thomas Eiter, Giovambattista Ianni, Thomas Krennwallner, Thomas Lukasiewicz, and Jan Maluszynski. “Hybrid Reasoning with Rules and Ontologies”. In: *Semantic Techniques for the Web, The REWERSE Perspective.* Vol. LNCS 5500. Springer-Verlag, 2009, pp. 1–49.

## Conference Papers

- [27] Denise Angilica, Giovambattista Ianni, and Francesco Pacenza. “Declarative AI design in Unity using Answer Set Programming”. In: *IEEE Conference on Games (CoG)*. To appear. 2022.
- [28] Francesco Calimeri, Giovambattista Ianni, Francesco Pacenza, Simona Perri, and Jessica Zangari. “ASP-based Multi-shot Reasoning via DLV2 with Incremental Grounding”. In: *24th International Symposium on Principles and Practice of Declarative Programming. PPDP 2022. To Appear*. 2022.
- [29] Francesco Calimeri, Giovambattista Ianni, Francesco Pacenza, Simona Perri, and Jessica Zangari. “Stream Reasoning with Incremental Grounding”. In: *5th Stream Reasoning Workshop (invitation only)*. 2021.
- [30] Denise Angilica, Aysu Bogatarkan, Giovambattista Ianni, and Francesco Pacenza. “Using rule-based tools for the fast prototyping of artificial players in game development”. In: *13th Workshop on Answer Set Programming and Other Computing Paradigms co-located with the 36th International Conference on Logic Programming, ASPOCP@ICLP2020*. 2020.
- [31] Francesco Calimeri, Stefano Germano, Giovambattista Ianni, Francesco Pacenza, Simona Perri, and Jessica Zangari. “Integrating Rule-Based AI Tools into Mainstream Game Development”. In: *Rules and Reasoning - Second International Joint Conference, RuleML+RR 2018, Luxembourg, September 18-21, 2018, Proceedings. LNCS 11298*. 2018, pp. 310–317. doi: 10.1007/978-3-319-99906-7\\_23. URL: [https://doi.org/10.1007/978-3-319-99906-7%5C\\_23](https://doi.org/10.1007/978-3-319-99906-7%5C_23).
- [32] F. Calimeri, D. Fuscà, G. Ianni, G. Melissari, and J. Zangari. “The new DLV Grounder: External Computations, Interoperability and Customizability”. In: *Proceedings of the 4th Workshop on Grounding and Transformations for Theories with Variables (GTTV 2017), Workshop of the 14th International Conference on Logic Programming and Nonmonotonic Reasoning (LPNMR’17), Hanasaari Conference Center, Espoo, Finland, July 3-6, 2017*. 2017, pp. 71–86.
- [33] Mario Alviano, Francesco Calimeri, Guenther Charwat, Carmine Dodaro, Minh Dao-Tran, Giovambattista Ianni, Thomas Krennwallner, Martin Kronegger, Johannes Oetsch, Andreas Pfandler, Joerg Puehrer, Christoph Redl, Francesco Ricca, Patrik Schneider, Martin Schwengerer, Lara Spendier, Johannes Peter Wallner, and Guohui Xiao. “The Fourth Answer Set Programming Competition: Preliminary Report”. In: *12th International Conference on Logic Programming and Nonmonotonic Reasoning (LPNMR), LNAI 8148*. 2013, pp. 42–53.
- [34] Francesco Calimeri, Giovambattista Ianni, Simona Perri, and Jessica Zangari. “The Eternal Battle between Determinism and Nondeterminism: preliminary Studies in the Sudoku Domain”. In: *20th RCRA International Workshop on Experimental Evaluation of Algorithms for solving problems with combinatorial explosion*. 2013.

- [35] Francesco Cauteruccio and Giovambattista Ianni. “A Domain Meta-wrapper Using Seeds for Intelligent Author List Extraction in the Domain of Scholarly Articles”. In: *17th International Conference on Theory and Practice of Digital Libraries (TPDL 2013). LNCS 8092*. 2013, pp. 313–318. DOI: <http://dx.doi.org/10.1007/978-3-642-40501-3>.
- [36] Guenther Charwat, Giovambattista Ianni, Thomas Krennwallner, Martin Kronegger, Andreas Pfandler, Christoph Redl, Martin Schwengerer, Lara Spendier, Johannes Peter Wallner, and Guohui Xiao. “VCWC: A Versioning Competition Workflow Compiler”. In: *12th International Conference on Logic Programming and Nonmonotonic Reasoning (LPNMR), LNAI 8148*. 2013, pp. 233–238.
- [37] Michael Fink, Stefano Germano, Giovambattista Ianni, Christoph Redl, and Peter Schueller. “ActHEX: Implementing HEX Programs with Action Atoms”. In: *12th International Conference on Logic Programming and Nonmonotonic Reasoning (LPNMR), LNAI 8148*. 2013, pp. 317–322.
- [38] Francesco Calimeri, Giovambattista Ianni, Francesco Ricca, Mario Alviano, Annamaria Bria, Gelsomina Catalano, Susanna Cozza, Wolfgang Faber, Onofrio Febbraro, Nicola Leone, Marco Manna, Alessandra Martello, Claudio Panetta, Simona Perri, Kristian Reale, Maria Carmela Santoro, Marco Sirianni, Giorgio Terracina, and Pierfrancesco Veltri. “The Third Answer Set Programming Competition: Preliminary Report of the System Competition Track”. In: *LPNMR 2011. LNAI 6645*. 2011, pp. 388–403. ISBN: 978-3-642-20894-2. DOI: [http://dx.doi.org/10.1007/978-3-642-20895-9\\_46](http://dx.doi.org/10.1007/978-3-642-20895-9_46).
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- [41] Selen Basol, Ozan Erdem, Michael Fink, and Giovambattista Ianni. “HEX Programs with Action Atoms”. In: *Technical Communications of the 26th International Conference on Logic Programming, ICLP 2010, July 16-19, 2010, Edinburgh, Scotland, UK*. 2010, pp. 24–33. DOI: 10.4230/LIPIcs.ICLP.2010.24. URL: <http://www.kr.tuwien.ac.at/research/systems/dlvhex/acthex.pdf>.
- [42] Francesco Calimeri, Susanna Cozza, Giovambattista Ianni, and Nicola Leone. “Enhancing ASP by Functions: Decidable Classes and Implementation Techniques”. In: *AAAI-10 Special Track on New Scientific and Technical Advances in Research (Nectar)*. The AAAI Nectar Track selected the most significant AI results in the years

- 2008-2010 to be presented at AAAI 2010. 2010, pp. 1666–1670. ISBN: 978-1-57735-463-5.
- [43] Francesco Calimeri, Susanna Cozza, Giovambattista Ianni, and Nicola Leone. “An ASP System with Functions, Lists, and Sets”. In: *Logic Programming and Nonmonotonic Reasoning, 10th International Conference, LPNMR 2009*. Vol. LNCS 5753. 2009, pp. 483–489. DOI: [http://dx.doi.org/10.1007/978-3-642-04238-6\\_46](http://dx.doi.org/10.1007/978-3-642-04238-6_46).
  - [44] Francesco Calimeri, Susanna Cozza, Giovambattista Ianni, and Nicola Leone. “Magic Sets for the Bottom-Up Evaluation of Finitely Recursive Programs”. In: *Logic Programming and Nonmonotonic Reasoning, 10th International Conference, LPNMR 2009*. Vol. LNCS 5753. 2009, pp. 71–86. DOI: [http://dx.doi.org/10.1007/978-3-642-04238-6\\_9](http://dx.doi.org/10.1007/978-3-642-04238-6_9).
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