

# Curriculum Vitæ et Studiorum

Carmine Dodaro

31 May 2018

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## 1 Personal information

**First name:** Carmine  
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**Date and place of birth:** 08th July 1987, Cosenza, Italia  
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## Current position

Researcher (ricercatore a tempo determinato di tipo A) at the Department of Informatics, Bioengineering, Robotics and Systems Engineering (DIBRIS), University of Genova.

## 2 Education and training

- January 2015. University of Calabria, Ph.D. in Mathematics and Computer Science.
- April 2013 - October 2013. Visiting researcher at Complex and Adaptive Systems Laboratory (CASL), University College of Dublin.
- February 2012. First Certificate in English (FCE) issued by University of Cambridge attesting the knowledge of the English language to B2 level of the CEFR.
- March 2011 - July 2011. Visiting researcher at Knowledge Based Systems (KBS), TU Wien.
- October 2009 - December 2011. University of Calabria, Master of Science in Computer Science, 110/110 cum laude and honorable mention.
- October 2005 - December 2008. University of Calabria, Bachelor of Science in Computer Science, 108/110.

### 3 Scholarships and working positions

**Researcher.** From 1st January 2017 to today I am a researcher at the Department of Informatics, Bioengineering, Robotics and Systems Engineering (DIBRIS), University of Genova.

**Postdoc.** From 1st December 2014 to 31st December 2016 I was postdoc at the Department of Mathematics and Computer Science, University of Calabria.

**Ph.D. Scholarship.** The scholarship for my Ph.D. was funded by European Social Fund.

### 4 National and international collaborations

**2017–today.** Member of the Department of Informatics, Bioengineering, Robotics and Systems Engineering, University of Genova.

**2017–today.** Collaboration with Matti Järvisalo, HIIT, Department of Computer Science, University of Helsinki.

**2016–today.** Collaboration with Wolfgang Faber, School of Computing and Engineering University of Huddersfield.

**2016–today.** Collaboration with Peter Schüller, Faculty of Engineering, Marmara University

**2015–today.** Collaboration with Kostyantyn Shechekotykhin, Intelligent Systems and Business Informatics, Alpen-Adria University.

**2013–2015.** Collaboration with Joao Marques-Silva, Complex and Adaptive Systems Laboratory (CASL), University College of Dublin.

**2012–2016.** Member of the Department of Mathematics and Computer Science, University of Calabria.

**March–July 2011.** Visiting researcher at Knowledge Based Systems (KBS), TU Wien.

## 5 Awards

**Best paper award ICLP 2016.** The paper *Anytime answer set optimization via unsatisfiable core shrinking* was awarded as best paper of the International Conference on Logic Programming (ICLP) 2016.

**Award AI\*IA Neolaureati.** My master thesis was awarded as the best Italian thesis in Artificial Intelligence by “Associazione Italiana per l’Intelligenza Artificiale (AI\*IA)”.

**Awards for wasp.** I am the main developer of wasp, an ASP solver obtaining the first position at the “marathon track” and the second position at the “regular track” of Answer Set Programming Competition 2015.

**Second position at ASP Modeling Competition 2015.** I was in the team that obtained the second position at the Answer Set Programming Modeling Competition 2015.

**First position at ASP Modeling Competition 2014.** I was in the team that obtained the first position at the Answer Set Programming Modeling Competition 2014.

## 6 Talks

Invited talks:

- Alpen-Adria University, Klagenfurt, Austria, 2016. *Efficient Solving Techniques for Answer Set Programming.*
- International Conference of the Italian Association for Artificial Intelligence (AI\*IA) 2012. *WASP: A New Model Generator.*

Talks at conferences and workshops:

- Logic Programming and Nonmonotonic Reasoning (LPNMR), 2017. *Nurse Scheduling via Answer Set Programming.*
- International Conference on Logic Programming (ICLP) 2016. *Combining Answer Set Programming and domain heuristics for solving hard industrial problems (Application Paper).*

- International Conference of the Italian Association for Artificial Intelligence (AI\*IA) 2016. *Answer Set Enumeration via Assumption Literals*.
- International Workshop on Experimental Evaluation of Algorithms for Solving Problems with Combinatorial Explosion (RCRA) 2016. *External Propagators in WASP: Preliminary Report*.
- Logic Programming and Nonmonotonic Reasoning (LPNMR), 2015. *Advances in WASP*.
- Logic Programming and Nonmonotonic Reasoning (LPNMR), 2015. *Interactive Debugging of Non-ground ASP Programs*.
- International Workshop on Answer Set Programming and Other Computing Paradigms (ASPOCP) 2014. *On the Implementation of Weak Constraints in WASP*.
- International Conference of the Italian Association for Artificial Intelligence (AI\*IA) 2013. *Comparing Alternative Solutions for Unfounded Set Propagation in ASP*.
- International Conference on Logic Programming (ICLP) Doctoral Consortium 2013. *Engineering an Efficient Native ASP Solver*.

## 7 Committee of Conferences

I was member of the organization committee of the following workshop:

- Second Doctoral Workshop in Artificial Intelligence (DWAI 2014), workshop of 13th Symposium of the Italian Association for Artificial Intelligence "Artificial Intelligence for Society and Economy" (AI\*IA 2014), Pisa, Italia.

I was the chair of the organization committee (with Valeria Fionda) of the following conference:

- 16th European Conference on Logics in Artificial Intelligence (JELIA 2019), Cosenza, Italia.

I was in the program committee of the following conferences/workshops:

- International Workshop on Experimental Evaluation of Algorithms for Solving Problems with Combinatorial Explosion (RCRA) 2018

- International Workshop on Answer Set Programming and Other Computing Paradigms (ASPOCP) 2018
- AAAI Conference on Artificial Intelligence (AAAI) 2018
- AAAI Conference on Artificial Intelligence (AAAI) 2017
- International Workshop on Experimental Evaluation of Algorithms for Solving Problems with Combinatorial Explosion (RCRA) 2017
- International Workshop on Practical Aspects of Answer Set Programming (PAoASP) 2017
- International Joint Conference on Artificial Intelligence (IJCAI) 2016
- European Conference on Artificial Intelligence (ECAI) 2016
- International Workshop on Experimental Evaluation of Algorithms for Solving Problems with Combinatorial Explosion (RCRA) 2016

## 8 Reviewer activities

I was a reviewer for the following journals/conferences/workshops:

- Künstliche Intelligenz, German Journal on Artificial Intelligence
- Special issue of the Fundamenta Informaticae journal 2015
- Theory and Practice of Logic Programming
- IJCAI 2018, ICLP 2018, KR 2018, LPNMR 2017, IJCAI 2017, ICLP 2017, KR 2016, AAAI 2016, SAT 2016, ASPOCP 2015, ICLP/TPLP 2015, IJCAI 2015, RCRA 2015, AAAI 2014, JELIA 2014, RCRA 2012

## 9 Projects

I have been/am involved in the following projects:

- (PI) Grant FFABR, “Fondo per il finanziamento delle attività base di ricerca”, comma 295 della Legge di Bilancio 2017 (Legge 232/2016).

- (Participant) Cloud for Europe pre-commercial procurement (PCP) project co-founded by EU Commission under Framework Programme for Research and Innovation (FP7), grant agreement no. 610650 (through AgID, Agenzia per l'Italia Digitale): Phase I "Solution design" (Lots 2 and 3) and Phase 2 "Prototype development" (Lot 3).
- (Participant) GESTEC - Tecnologie orientate ai Servizi per lo sviluppo e per l'integrazione di piattaforme ICT. SIIT Research project, Phase 2.
- (Participant) DM62617 "Rete Integrata Mediterranea e Accesso a dati e prodotti" (RIMA), funded by MIUR and Distretto Ligure delle Tecnologie Marine.

## 10 Teaching activities

I am, or I was, instructor for the following courses:

- Informatica per gli umanisti, University of Genova (54 out of 54 hours), 2017/2018;
- Efficient ASP Techniques for Solving Hard Problems, course for Ph.D. students, University of Calabria (8 hours), 2017/2018;
- Languages and Solving Techniques for Knowledge Representation and Reasoning, course for Ph.D. students, University of Genova (20 hours), 2017/2018;

I was professor on contract for the following courses:

- Enterprise applications, University of Calabria (24 out of 48 hours), 2015/2016;
- Object Oriented Programming, University of Calabria (36 out of 96 hours), 2015/2016;
- Enterprise applications, University of Calabria (24 out of 48 hours), 2014/2015;
- Object Oriented Programming, University of Calabria (24 out of 96 hours), 2014/2015;
- Object Oriented Programming, University of Calabria (48 out of 96 hours), 2013/2014;

- Object Oriented Programming, University of Calabria (48 out of 96 hours), 2011/2012;
- Course at the company “DLVsystem”, 2015/2016;
- Module A.2, “Tecniche avanzate per lo sviluppo di applicazioni Java” for the project BA2KnowTraining, 2014/2015;
- E-safety at schools, Piano Nazionale Scuola Digitale (PNSD).

## 11 Ph. D.

- Member of the Ph.D. board of Computer Science and Systems Engineering, University of Genova - DOT1311744.
- Supervisor of Arnel Zamayla, Ph.D. student at University of Calabria.

## 12 Publications

### 12.1 Journals

- Alviano M., Dodaro C., Maratea M.: *Shared aggregate sets in answer set programming*. Theory and Practice of Logic Programming. Cambridge University Press, to appear, 2018. – Scimago ranking **Q1**.
- Alviano M., Dodaro C., Jarvisalo M., Maratea M., Previti A.: *Cautious reasoning in ASP via minimal models and unsatisfiable cores*. Theory and Practice of Logic Programming. Cambridge University Press, to appear, 2018. – Scimago ranking **Q1**.
- Cuteri B., Dodaro C., Ricca F., Schüller P.: *Constraints, lazy constraints, or propagators in ASP solving: An empirical analysis*. Theory and Practice of Logic Programming. Cambridge University Press, 17(5-6): 780-799, 2017. – Scimago ranking **Q1**.
- Alviano M., Dodaro C.: *Anytime answer set optimization via unsatisfiable core shrinking\**. Theory and Practice of Logic Programming. Cambridge University Press, 16(5-6): 533-551, 2016. – Scimago ranking **Q1**.



- Dodaro C., Gasteiger P., Leone N., Musitsch B., Ricca F., Schekotihin K.: *Combining Answer Set Programming and domain heuristics for solving hard industrial problems (Application Paper)*. Theory and Practice of Logic Programming. Cambridge University Press, 16(5-6): 653-669, 2016. – Scimago ranking **Q1**.
- Alviano M., Dodaro, C., Marques-Silva. J., and Ricca, F.: *Optimal Stable Model Search: Algorithms and Implementation*. Journal of Logic and Computation. *Accepted, in press*. – Scimago ranking **Q2**.
- Alviano M., Dodaro C., Ricca F.: *Anytime Computation of Cautious Consequences in Answer Set Programming*. Theory and Practice of Logic Programming. Cambridge University Press, 14(4-5): 755-770, 2014. – Scimago ranking **Q1**.

## 12.2 Conferences

- Amendola G., Dodaro C., Faber W., Ricca F.: *Externally supported models for efficient computation of paracoherent answer sets*. In Shlomo Zilberstein, editor. Proceedings of the Thirty-Second AAAI Conference on Artificial Intelligence (AAAI), 2018. – GII-GRIN ranking **A++**
- Alviano M., Dodaro C.: *Unsatisfiable Core Shrinking for Anytime Answer Set Optimization*. In Carles Sierra, editor. Proceedings of the Twenty-Sixth International Joint Conference on Artificial Intelligence (IJCAI), 2017. – GII-GRIN ranking **A++**
- Amendola G., Dodaro C., Faber W., Leone N., Ricca F.: *On the Computation of Paracoherent Answer Sets*. In Satinder P. Singh and Shaul Markovitch, editors. Proceedings of the Thirty-First AAAI Conference on Artificial Intelligence (AAAI), 2017. – GII-GRIN ranking **A++**
- Alviano M., Dodaro C., Maratea M.: *An Advanced Answer Set Programming Encoding for Nurse Scheduling*. In Floriana Esposito and Roberto Basili and Stefano Ferilli and Francesca A. Lisi, editors. Proceedings of AI\*IA 2017: Advances in Artificial Intelligence - XVIth International Conference of the Italian Association for Artificial Intelligence, 2017.
- Dodaro C., Maratea M.: *Nurse Scheduling via Answer Set Programming*. In Marcello Balduccini and Tomi Janhunnen, editors. Procee-

dings of the 14-th International conference on Logic Programming and Nonmonotonic Reasoning (LPNMR), 2017.

- Alviano M., Calimeri F., Dodaro C., Fuscà D., Leone N., Perri S., Ricca F., Veltri P., Zangari J.: *The ASP System DLV2*. In Marcello Balducini and Tomi Janhunen, editors. Proceedings of the 14-th International conference on Logic Programming and Nonmonotonic Reasoning (LPNMR), 2017.
- Alviano M., Dodaro C.: *Answer Set Enumeration via Assumption Literals*. In Giovanni Adorni and Stefano Cagnoni and Marco Gori and Marco Maratea. Proceedings of AI\*IA 2016: Advances in Artificial Intelligence - XVth International Conference of the Italian Association for Artificial Intelligence, 2016.
- Amendola G., Dodaro C., Leone N., Ricca F.: *On the Application of Answer Set Programming to the Conference Paper Assignment Problem*. In Giovanni Adorni and Stefano Cagnoni and Marco Gori and Marco Maratea. Proceedings of AI\*IA 2016: Advances in Artificial Intelligence - XVth International Conference of the Italian Association for Artificial Intelligence, 2016.
- Alviano M., Dodaro C.: *Completion of Disjunctive Logic Programs*. In Subbarao Kambhampati, editor. Proceedings of the Twenty-Fifth International Joint Conference on Artificial Intelligence (IJCAI), 2016. – GII-GRIN ranking **A++**
- Alviano M., Dodaro, C., Ricca, F.: *A MaxSAT Algorithm Using Cardinality Constraints of Bounded Size*. In: Qiang Yang and Michael Wooldridge, editors. Proceedings of the Twenty-Fourth International Joint Conference on Artificial Intelligence (IJCAI), 2015. – GII-GRIN ranking **A++**
- Dodaro C., Gasteiger P., Musitsch B., Ricca F., Shchekotykhin K.: *Interactive debugging of non-ground ASP programs*. In: Francesco Calimeri and Giovambattista Ianni and Mirosław Truszczyński, editors. Proceedings of Logic Programming and Nonmonotonic Reasoning (LPNMR), 2015.
- Alviano M., Dodaro, C., Leone, N., and Ricca, F.: *Advances in WASP*. In: Francesco Calimeri and Giovambattista Ianni and Mirosław Truszczyński, editors. Proceedings of Logic Programming and Nonmonotonic Reasoning (LPNMR), 2015.

- Dodaro, C., Leone, N., Nardi, B., Ricca, F.: *Allotment problem in travel industry: A solution based on ASP*. In: Balder ten Cate and Alessandra Mileo, editors. Proceedings of the International Conference on Web Reasoning and Rule Systems (RR), 2015.
- Morgado A., Dodaro C., and Marques-Silva J.: *Core-Guided MaxSAT with Soft Cardinality Constraints*. In: Barry O’Sullivan, editor. Proceedings of the International Conference on Principles and Practice of Constraint Programming (CP), 2014. – GII-GRIN ranking **A**
- Alviano, M., Dodaro, C., Faber, W., Leone, N., Ricca, F.: *WASP A Native ASP Solver Based on Constraint Learning*. In: Pedro Cabalar and Tran Cao Son, editors. Proceedings of Logic Programming and Nonmonotonic Reasoning (LPNMR), 2013.
- Alviano, M., Calimeri, F., Charwat, G., Dao-Tran, M., Dodaro, C., Ianni, G., Krennwallner, T., Kronegger, M., Oetsch, J., Pfandler, A., Pührer, J., Redl C., Ricca, F., Schneider, P., Schwengerer, M., Spindler, L.K., Wallner, J.P., Xiao, G.: *The Fourth Answer Set Programming Competition: Preliminary Report*. In: Pedro Cabalar and Tran Cao Son, editors. Proceedings of Logic Programming and Nonmonotonic Reasoning (LPNMR), 2013.
- Alviano M., Dodaro, C., Ricca, F.: *Comparing Alternative Solutions for Unfounded Set Propagation in ASP*. In Matteo Baldoni and Cristina Baroglio and Guido Boella and Roberto Micalizio, editors. Proceedings of AI\*IA 2013: Advances in Artificial Intelligence, 2013.
- Dodaro, C., Alviano, M., Faber, W., Leone, N., Ricca, F., and Sirianni, M.: *The Birth of a WASP: Preliminary Report on a New ASP Solver*. In Fabio Fioravanti, editor. Proceedings of the Italian Conference on Computational Logic (CILC) 2011.

### 12.3 Workshops

- Dodaro C., Ricca F., Schüller P.: *External Propagators in WASP: Preliminary Report*. In Stefano Bistarelli and Andrea Formisano and Marco Maratea, editors. Proceedings of the 23rd International Workshop on Experimental Evaluation of Algorithms for Solving Problems with Combinatorial Explosion (RCRA), 2016.
- Amendola G., Dodaro C., Ricca F.: *ASPQ: An ASP-Based 2QBF Solver*. In Florian Lonsing and Martina Seidl, editors. Proceedings of

the 4th International Workshop on Quantified Boolean Formulas (QBF 2016) co-located with 19th International Conference on Theory and Applications of Satisfiability Testing (SAT 2016) (QBF@SAT), 2016.

- M. Alviano, C. Dodaro, F. Ricca: *JWASP: A New Java-Based ASP Solver*. In: Stefano Bistarelli and Andrea Formisano and Marco Maratea, editors. Proceedings of the 22nd International Workshop on Experimental Evaluation of Algorithms for Solving Problems with Combinatorial Explosion (RCRA), 2015.
- Alviano M., Dodaro, C., Ricca, F.: *Reduct-based Stability Check Using Literal Assumptions*. In: Daniela Incezan and Marco Maratea, editors. Proceedings of the 8th International Workshop on Answer Set Programming and Other Computing Paradigms (ASPOCP), 2015.
- Alviano M., Dodaro, C., Ricca, F.: *Preliminary Report on WASP 2.0*. In: Sébastien Konieczny and Hans Tompits, editors, Proceedings of the International Workshop on Non-Monotonic Reasoning (NMR), 2014.
- Alviano M., Dodaro, C., Marques-Silva, J., Ricca, F.: *On the Implementation of Weak Constraints in WASP*. In: Daniela Incezan and Marco Maratea, editors. Proceedings of the 7th International Workshop on Answer Set Programming and Other Computing Paradigms (ASPOCP), 2014.
- Dodaro, C.: *Engineering An Efficient Native ASP Solver*. In: TPLP Online Supplement. Volume 13 (4-5), July 2013.