a CURRICULUM VITAE

PERSONAL INFORMATION

Family Name, First Name:	De Giacomo, Giuseppe
Researcher ID:	orcid.org/0000-0001-9680-7658
Nationality:	Italian
Date of birth:	August 8, 1965
Home URL:	http://www.dis.uniroma1.it/~degiacomo

EDUCATION

1995	**PhD:** Dipartimento di Informatica e Sistemistica, Università degli Studi di Roma "La Sapienza", Italy Supervised by Prof. Maurizio Lenzerini.
1991	**Master:** Laurea in Ingegneria Elettronica (5 years), Facoltà di Ingegneria, Università degli Studi di Roma "La Sapienza", Italy
1990–1991	**Erasmus Visiting Student** at University of Bristol, UK, with John W. Lloyd, preparing master thesis

CURRENT POSITION

2006 – pres.	**Full Professor** (Professore Ordinario), Università degli Studi di Roma "La Sapienza", Italy

PREVIOUS POSITIONS

2001 – 2006	**Associate Professor** (Professore Associato), Università degli Studi di Roma "La Sapienza", Italy
1998 – 2001	**Assistant Professor** (Ricercatore), Università degli Studi di Roma "La Sapienza", Italy
1996 – 1997	**Research Associate**, University of Toronto, Toronto, ON, Canada, working with Prof. Hector Levesque and Prof. Ray Reiter
1993/1994	**Visiting Scholar**, Stanford University, Stanford, CA, USA, working with Prof. Yoav Shoham

FELLOSHIPS AND AWARDS

2016	**AAAI Fellow**, Fellow of the Association for the Advancement of Artificial Intelligence, Citation: *For significant contributions to the field of knowledge representation and reasoning, and applications to data integration, ontologies, planning, and process synthesis and verification.*
2015	**ACM Fellow**, Fellow of the Association for Computing Machinery, Citation: *For contributions to description logics, data management, and verification of data-driven processes*
2012	**ECCAI Fellow** (aka EurAI Fellow), Fellow of the European Association for Artificial Intelligence
2013	**Most influential paper in the decade** at th 11th International Conference on Service Oriented Computing (ICSOC'13) for the paper *Automatic Composition of E-services That Export Their Behavior* published at ICSOC03.
2013	**Miegunyah Distinguished Fellowship**, University of Melbourne, for the public lecture *Cognitive Robotics: The science of building intelligent autonomous robots and software agents*
2010	**IBM Open Collaborative Faculty Award 2010** for *Artifact-centric Business Process Modeling*, and **IBM Open Collaborative Faculty Award 2009** for *Radical Simplification of Artifact-Centric Buseness Process Modeling*

SUPERVISION OF YOUNG RESEARCHERS

He supervised a number of **PhD students**, including Daniela Berardi (PhD in 2005, now working in industry), Fabio Patrizi (PhD in 2009, now assistant professor at Sapienza), Riccardo De Masellis (PhD in 2013, now PostDoc at FBK, Trento, Italy) and Paolo Felli (PhD in 2013, PostDoc at U. Nottingham), as well as **PostDocs**. He mentored a number of **early career researchers**, including Sebastian Sardina (now associate professor at RMIT, Melbourne), Marco Montali (now associate professor at U. Bolzano, Italy), Stavros Vassos (now funder of the StartUp Helvia.io), Sasha Rubin (now assistant professor at U. Napoli, Italy).

TEACHING ACTIVITIES

He has a wide teaching and academic experience. Since 1998, he has taught a large number of undergraduate and graduate courses at Sapienza. He has taught PhD courses in several European summer schools, including ESSLLI'03, ESSLLI'05, INFWEST'07. He has given several tutorials at top conferences, including ICSOC'04, WWW'05, ISWC'08, AAAI'10, IJCAI'15, IJCAI'16, ISWC'17.

ORGANIZATION OF SCIENTIFIC MEETINGS

He regularly serves as PC member of many international conferences and workshops in AI and CS, including IJCAI ('09, '07, '05, '03, '01, '99, '95), AAAI ('15, '10, '07, '06, '04, '02, '00, '98), KR ('16 '12, '10, '08, '06, '02, '00, '98, '96), ECAI ('16, '10, '08), ICAPS ('15, '11, '09, '08, '07, '06), AAMAS ('13, '12, '02), PODS ('17*, '15, '13, '11, '10, '09*, '08, '07, '03, '02, '00 - *PODS PC), ICDT ('15, '14, '11, '07, '05, '03, '99, '97), BPM ('12, '11, '10). Moreover he has been:

– Program Chair of KR'14
– Local organizer of KR'12
– Area chair of IJCAI'16, AAAI'12, IJCAI'11
– Senior PC of IJCAI'17, IJCAI'15, AAAI'16, AAAI'13, IJCAI'13, AAAI'11
– Workshops chair of AAAI'11, AAAI'10

INSTITUTIONAL RESPONSIBILITIES

2016 – curr.	Member of the Department Directorate (Giunta di Dipartimento), Dipartimento di Ingegneria Informatica, Automatica e Gestionale, Sapienza
2011 - 2014	Director of the PhD Program in Computer Science and Engineering, Sapienza
2003 - 2008	Scientific Coordinator of the Erasmus Program at the Engineering School, Sapienza

COMMISSIONS OF TRUST

– Artificial Intelligence J. (AIJ), Elsevier, Review Editor, since 2014;
  (Editorial Board Member, since 2013)
– Journal of Artificial Intelligence Research (JAIR), Associate Editor (2008 – 2015);
  (Editorial Board Member (2006 – 2008))
– Acta Informatica, Springer, Editorial Board Member, since 2015
– CoRR arXiv moderator for Artificial Intelligence, since 2014
– AAAI Fellow Selection Committee, since 2017
– ECCAI/EurAI Fellow Selection Committee, since 2014
– Vice President of Steering Committee of KR Inc., since 2016; in Steering Committee since 2014
– Steering Committee of the Description Logics Workshop Series (2006 – 2009)

MEMBERSHIPS OF SCIENTIFIC SOCIETIES

Lifetime Member of Association for Computer Machinery (ACM)
Lifetime Member of Association for Advancement of Artificial Intelligence (AAAI)
Member of Italian Association for Artificial Intelligence (AI*IA)

b   TEN-YEAR TRACK RECORD

PI's research concerns theoretical, methodological and applicative aspects in different areas of AI and CS, including: LTL and LDL over finite traces; Bounded situation calculus; Decidability of data-aware processes; Generalized planning by model checking and automata-theoretic techniques from Verification; ConGolog programming language based on Situation Calculus; Ontology Based Data Access (OBDA); DL-lite family: description logics with tractable data complexity; Reasoning on UML Class Diagrams; Service composition and synthesis; Regular path queries for view-based query answering in graph databases; Data integration with description logics constraints; Conjunctive query answering in description logics; Correspondence between description logics and logics of programs. This work has deeply impacted several areas of AI and CS.

IMPACT MEASURES

The PI is the author of more than 250 publications in top journals and conferences, including the following CORE A*/A conferences and journals (since 2007 in bold, career in italic): IJCAI (**17**, *22*, A*), AAAI (**11**, *16*, A*), KR (**10**, *20*, A*), AAMAS (**7**, *8*, A*), ICAPS (**5**, *5*, A*), PODS (**3**, *9*, A*), VLDB (**2**, *3*, A*), ISWC (**2**, *2*, A), CAiSE (**2**, *4*, A), ECAI (**3**, *4*, A), BPM (**3**, *3*, A), ICSOC (**1**, *4*, A), ICDT (**1**, *3*, A), Artif. Intell. (**4**, *7*, A*), J. Comput. Syst. Sci. (**2**, *3*, A*), Inf. Syst. (**1**, *2*, A*), J. Log. Comput. (**1**, *4*, A), J. Artif. Intell. Res. (**1**, *2*, A), J. Autom. Reasoning (**1**, *1*, A), ACM Trans. Comput. Log. (**1**, *2*, A), Theor. Comput. Sci. (**1**, *2*, A).

A comprehensive list of publication can be found on DBLP `http://dblp.uni-trier.de`. Currently the PI's 5 most cited papers are (citations from google scholar):

1. ***Tractable reasoning and efficient query answering in description logics: The DL-Lite family.*** *D. Calvanese, G. De Giacomo, D. Lembo, M. Lenzerini, R. Rosati. Journal of Automated Reasoning 39 (3), 385-429, 2007 -* **1146** cit.
2. ***ConGolog, a concurrent programming language based on the situation calculus.*** *G. De Giacomo, Y. Lesperance, H. Levesque: Artif. Intell. 121(1-2): 109-169 (2000) -* **654** cit.
3. ***Linking data to ontologies.*** *A. Poggi, D. Lembo, D. Calvanese, G. De Giacomo, M. Lenzerini, R. Rosati. Journal on data semantics X, 133-173, 2008 -* **560** cit.
4. ***Reasoning on UML class diagrams.*** *D. Berardi, D. Calvanese, G. De Giacomo. Artif. Intell. 168(1-2): 70-118 (2005) -* **547** cit.
5. ***Automatic Composition of E-services That Export Their Behavior.*** *D. Berardi, D. Calvanese, G. De Giacomo, M. Lenzerini, M. Mecella. ICSOC 2003: 43-58 -* **519** cit. Awarded as "**the most influential ICSOC paper in the last 10 years**" at ICSOC 2013.

According to Google Scholar, July 2017, the PI's h-index is 68, with 16952 citations and his i10-index is 191. These values are among the highest in Europe in AI and CS and make the PI the 3rd most cited CS author in Italy, according to a study available at `http://via-academy.org`.

REPRESENTATIVE PUBLICATIONS (SELECTION)

1. ***Generalized Planning: Non-Deterministic Abstractions and Trajectory Constraints.*** *B. Bonet, G. De Giacomo, H. Geffner, S. Rubin. IJCAI 2017 -* CORE A*.
2. ***Agent planning programs.*** *G. De Giacomo, A. Gerevini, F. Patrizi, A. Saetti, S. Sardina. Artif. Intell. 231: 64-106 (2016) -* CORE A*.
3. ***Bounded situation calculus action theories.*** *G. De Giacomo, Y. Lesperance, F. Patrizi. Artif. Intell. 237: 172-203 (2016) -* CORE A*.
4. ***Regular Open APIs.*** *D. Calvanese, G. De Giacomo, M. Lenzerini, M. Vardi. KR 2016: 329-338. -* CORE A*.
5. ***Synthesis for LTL and LDL on Finite Traces.*** *G. De Giacomo, M. Vardi: IJCAI 2015: 1558-1564 -* CORE A*.
6. ***Data complexity of query answering in description logics..*** *D. Calvanese, G. De Giacomo, D. Lembo, M. Lenzerini, R. Rosati. Artif. Intell. 195: 335-360 (2013) -* CORE A*.

7. ***Automatic behavior composition synthesis.*** *G. De Giacomo, F. Patrizi, S. Sardina. Artif. Intell. 196: 106-142 (2013)* - CORE A*.

8. ***Verification of relational data-centric dynamic systems with external services.*** *B. Bagheri Hariri, D. Calvanese, G. De Giacomo, A. Deutsch, M. Montali. PODS 2013: 163-174* - CORE A*.

9. ***On simplification of schema mappings.*** *D. Calvanese, G. De Giacomo, M. Lenzerini, M. Vardi. J. Comput. Syst. Sci. 79(6): 816-834 (2013)* - CORE A*.

10. ***View-based query answering in Description Logics: Semantics and complexity.*** *D. Calvanese, G. De Giacomo, M. Lenzerini, R. Rosati. J. Comput. Syst. Sci. 78(1): 26-46 (2012)* - CORE A*.

INVITED TALKS (SELECTION)

– On **LTL and LDL on Finite Traces: Reasoning, Verification, and Synthesis**: Gen-Plan@ICAPS 2017 (Keynote), Pittsburgh, USA; SR 2016 (Keynote), New York, USA; Highlights of Logic, Games and Automata 2015 (Keynote), Prague, CZ; ICAPS 2013 (Keynote), Rome, IT.

– On **Data-Aware Business Processes**: York U., (Distinguished Lassonde Lecture), Canada, 2017 ; U. of Toronto, Canada, 2017; WS-FM:FASOCC@BPM 2014, Eindhoven NL; ECAI 2014 (Keynote for Frontiers of AI), Prague, CZ.

– On **Bounded Situation Calculus**: WS. Formal Methods in AI 2017 (Keynote), U. "Federico II", Naples, IT; TIME 2015 (Keynote), Kassel, GE; WS. HYBRIS 2015 (Keynote), Potsdam, GE.

– On **Service Composition and Synthesis**: ICSOC 2013 (Invited talk for prize as most influential paper of decade), Berlin, GE; U. Brescia, IT 2012; U. of Toronto Canada, 2010; York University, Toronto, Canada, 2010; INFINT WS 2009, Bertinoro, IT; MSI 2005 Berlin, GE , Caen, FR.

– On **Ontology-based Data Access and Integration**: DL 2013 (Keynote), Ulm, Germany; U. of Toronto, Canada, 2010; Semantic Days Conference 2009, Stavanger, NO; IBM Research Center Watson, Hawthorne, NY, USA 2008.

RESEARCH PROJECTS (SELECTION)

The PI has leaded several projects, including: (2005–2008) EU FP6-7603 **TONES: Thinking ONtologiES**, PI for Sapienza, value: EUR 264,000 (total value: EUR 1,438,910), from final review: *The TONES project can be considered as a success story of a FET-project in terms of scientific achievements*; (2010–2013) EU FP7-ICT-257593 **ACSI: Artifact-Centric Service Interoperation**, PI for Sapienza, and Scientific Coordinator for the wole project, value: EUR 435,000 (total value: EUR 3,243,937), from final review: *The scientific productivity of ACSI has been extraordinary, leading to a great impact on BPM, DB and AI research, as indicated by invited talks and tutorials on ACSI results in many high profile conferences, and by the addition of ACSI topics to the list of conference and workshop topics in these areas.*; (2012–2016) EU FP7-IST-IP-318338 **OPTIQUE: Scalable End-user Access to Big Data**, key personel of Sapienza, value: EUR 802 488 (total value: EUR 9,838,329); (2009–2014) Open Collaboration Research W0954341 with Rick Hull of IBM T. J. Watson Research Center, NY, on **Data Aware Business Processes and Operation, through An Artifact-Centric Approach**, PI, value: USD 45,000; (2010–2012) UK Royal Society International Joint Project 2009/R2 on **Web Services Automatic Synthesis through ATL Symbolic Model Checking**, with Alessio Lomuscio, Imperial College London, total value: GBP 12,000; (2012–2014) Australian Research Council (ARC) Discovery Project DP120100332 **Optimisation of Embedded Virtual Complex Systems by Re-using a Library of available component**, with Sebastian Sardina of RMIT and Maurice Pagnucco of Univ. of Sidney, PI for Sapienza, total value: AUD 406,278; (2013–2015) Sapienza Ateneo Project **Spiritles: Spiritlet-based Smart Spaces**, PI, value: EUR 60,000. (2013–2018) US NSF Award Number: 1319459 **SHF: Small: Pushing the Frontier of Linear-Time Model-Checking Technology**, with Moshe Vardi, KP, total value: USD 304,582; (2015–2018) Sapienza Ateneo Project **ICE: Immersive Cognitive Environments**, PI, value: EUR 40.000; (2016–2019) China NFS Project No. 61572535 **Theory and Techniques for Reasoning about Actions and High-level Agent Control in Multi- agent Domains**, with Yongmei Liu of Sun Yat-sen U. in Guangzhou, PI for Sapienza, total value: CNY 804,000.

INDUSTRIAL LEADERSHIP

A pioneer project in 2003 with IBM Tivoli Lab highlighted several fundamental limitations in using semantic technologies available at that time for knowledge management. This gave rise to a novel research line that led to a new kind of Description Logic, called DL-Lite, and a new paradigm for accessing data through semantic technologies, called Ontology-based Data Access (OBDA). Since then, the PI led several industrial explorations promoting OBDA for data integration, preparation and discovery, which involved private and public organizations, such as the Monte dei Paschi di Siena Bank, Italian Minstery of Finance and Economics, Telecom Italia, Bloomberg, Italian Automobil Club (current). The success of such explorations has led the PI to found the Sapienza Start Up **OBDA Systems** (`http://www.obdasystems.com`) in Feb. 2017. The PI has been also a Contributor to W3C recommendation of OWL 2 Web Ontology Language Profiles (`https://www.w3.org/TR/owl2-profiles/`).