CLAUDIA d'AMATO
CURRICULUM VITAE
updated at September, 7th 2016

Contents

1 General Information

1.1 Personal Data and Contact Information

Name: Claudia **Surname:** d'Amato
Date of Birth: 16 January 1977 **Place of Birth:** Terlizzi **Nationality:** Italian

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1.2 Education

Doctor of Philosophy (May, 7th 2007)**:** PhD in Computer Science, University of Bari, Italy. Supervisor: Prof. Floriana Esposito, Co-Supervisor: Dr. Nicola Fanizzi.

Dissertation: "Similarity-based Learning Methods for the Semantic Web". Full marks evaluation External Reviewers: Prof. Steffen Staab, Prof. Ernesto Damiani

Master Degree (March, 28th 2003): Master Degree in Computer Science, University of Bari. Mark 110/110 CUM LAUDE. Dissertation: "*Automatic Classification of Symbolic Objects by O-NN Algorithm with weighted distance*". Supervisors: Prof. Donato Malerba, Prof. Floriana Esposito

Secondary School (July 1996)**:** Diploma Degree as Accountant Commercial Expert Programmer with mark 60/60 at Technical Institute for Commerce I.T.C. "A.M. TANNOIA" Corato (Bari).

1.3 Current Position and Qualification

Research Assistant (RTD-A) at Computer Science Department, University of Bari since January 25th 2016.

Habilitation for the function of Associate Professor for the sector "01/B1 – Informatics" on January 2014. Application: round 2012

1.4 Past Work and Research experiences

Research Fellowship (Assegni di Ricerca)

- April 1st 2015 – January 24th 2016: **Research Fellow (assegno di ricerca** ex. art.22 Legge 240/2010**) Department of Computer Science, University of Bari.** Title of the research: "Design and development of methods for discovery of semantically annotated knowledge bases (linked data sets)", S.S.D. INF/01, ING-INF/05;

- December 16th 2011 – December 15th 2013: **Research Fellow (assegno di ricerca** ex. art.22 Legge 240/2010**) Department of Computer Science, University of Bari.** Title of the research: "Research and Development of Machine Learning methods for ontological knowledge from weakly structured data" S.S.D. INF/01, ING-INF/05; (1+1 year)

- <u>April, 2nd 2007 – April, 1st 2011:</u> **Research Fellow (assegno di ricerca** ex. art. 51, comma 6, legge 27/12/1997, n.449**) Department of Computer Science, University of Bari.** Title of the research: "Inductive learning computational models for first order hybrid formalisms" S.S.D. ING-INF/05; INF/01 (2+2 years)

PhD Scholarship

- <u>January, 31st 2004 – October, 31st 2006:</u> **PhD Student** at Department of Computer Science, University of Bari.

Collaborations as Associated Researcher (Co.Co.Co)

- <u>July, 9th 2014 – January 8th 2015:</u> **Collaboration (Co.Co.Co.) with Department of Computer Science, University of Bari** for "PUGLIA@SERVICE (L'Ingegneria dei Servizi Internet-Based per lo sviluppo strutturale di un territorio intelligente) Project. Task: Design and development of clustering methods for grouping semantically annotated resources. Project responsible for Bari unit: Prof. Floriana Esposito.

- <u>December, 17th 2013 – June, 16th 2014:</u> **Collaboration (Co.Co.Co.) with Department of Computer Science, University of Bari** for "PUGLIA@SERVICE (L'Ingegneria dei Servizi Internet-Based per lo sviluppo strutturale di un territorio intelligente) Project. Task: Study of methods and techniques for mining Linked Open Data: ranking and aggregation of semantically annotated resources. Project responsible for Bari unit: Prof. Floriana Esposito.

- <u>August, 8th – December, 7th 2011:</u> **Collaboration (Co.Co.Co.) with Department of Computer Science, University of Bari** for SemanticPA (Tecnologie di Semantic Web per la Pubblica Amministrazione) Project. Task: Semantic retrieval of resources within the Public Administration and available on the Web. Project Responsible: Prof. Nicola Fanizzi.

- <u>April, 4th – August, 3rd 2011:</u> **Collaboration (Co.Co.Co.) with Department of Computer Science, University of Bari** for SemanticPA (Tecnologie di Semantic Web per la Pubblica Amministrazione) Project. Task: Analysis and developments of methods and techniques for automatic processing of Web available resources in the Public Administration: indexing, semantic categorization, end-point delivery. Project Responsible: Prof. Nicola Fanizzi.

- <u>November, 2nd 2006 – April, 30th 2007:</u> **Collaboration (Co.Co.Co.) with Department of Computer Science, University of Bari** for DIPIS project (Produzione Distribuita come Sistema Innovativo). Task: Analysis and application of clustering methods to be applied to Description Logics representation for managing semantic web services. Project Responsible: Prof. Giuseppe Visaggio.

- <u>January, 8th – March, 31st 2004:</u> **Collaboration (Co.Co.Co.) with Department of Computer Science, University of Bari** f o r COLLATE project (Collaboratory for Automation, Indexing and Retrieval of Digitalized Historical archive Material). Task: analysis of classification algorithms and supervised learning to be used for web mining problems within the COLLATE Project. Project Responsible: Prof. Floriana Esposito.

- <u>May, 19th – December, 31st 2003:</u> **Collaboration (Co.Co.Co.) with Omar S.p.A Allaxia group:** analyst and developer for the *Power* project: a system for registry management and associative marketing developed for **Confartigianato**

Other Work and Research Experiences

- <u>January, 1st – February, 15th 2012:</u> **scientific consultant for the e-LICO European project** for the tasks: a) Recommendations on ontology design and representation of core machine learning/data mining concepts. b) Development of part of the Data Mining

Ontology; c) Assessment of DM content and recommendations on content gaps to fill out.

- <u>January, 12th – March 11th 2015:</u> **Collaboration (Contratto collaborazione occasionale) with Department of Computer Science, University of Bari** for BIOFAR (Laboratorio Pubblico-Privato per la Biodiversità Molecolare) Project. Task: set up of the teaching material for an advanced course for high formation activities; topics: Description Logics, Ontology Design, Knowledge Management. Project Responsible: Prof. Floriana Esposito.

- <u>April, 14th – May, 15th 2003:</u> **Collaboration (Contratto di collaborazione occasionale) with Department of Computer Science, University of Bari** for ASSO project (Analysis System of Symbolic Official data, IST-2000-25561). Tasks: development of a software module for the empirical study of the properties of dissimilarity and matching measures for symbolic objects; test of the matching and dissimilarity modules; definition of a user guide to support users in choosing the best dissimilarity/matching measure. Project Responsible for the Unit of Bari: Prof. Floriana Esposito.

- <u>March 15th – April 30t h 2001:</u> **Collaboration (Contratto collaborazione occasionale) with Department of Computer Science, University of Bari.** Task: tutoring for lab teaching on Expert Systems within the Knowledge Engineering and Expert Stems course

- <u>September - December 2001</u>; <u>August - December 2000</u>: **Part-time Student at the Department of Computer Science, University of Bari** for the analysis and design of the Information System (SIFAS) of the Science Faculty of the University of Bari.

- <u>May 2000:</u> **Collaboration (Contratto di collaborazione occasionale) with C.I.L.A.** (Interdepartmental Center of Logic and Application) and University of Bari: tutoring for lesson concerning Expert Systems in the sphere of INNOVAMEDIA project.

2 Research Activities and Scientific Titles

2.1 Description of the Research Activity

Claudia d'Amato's research activity concerns with the study, the analysis and the application of Machine Learning methods (with particular attention to the inductive learning methods) to the Semantic Web (SW) domain. The ultimate goal is to (semi-)automatize the ontology mining tasks that are most of the time manually performed, thus resulting to be very time consuming besides of constituting the main bottleneck to the full realization of the SW.

Claudia d'Amato started her research activity on January 2004 when she obtained a grant from the University of Bari for being a PhD student in Computer Science for three years. She ended her PhD on January 2007 and defended her PhD thesis titled "Similarity-based Learning Methods for the Semantic Web" on May 2007 resulted with full marks. From April 2004 Claudia d'Amato is a research assistant at the University of Bari - Computer Science Department. Her research activity is articulated along the following three fundamental research lines and finds its application to the Semantic Web (SW) field.

1. definition of similarity and dissimilarity measures for expressive knowledge representation formalisms adopted in the SW and formalization of their theoretical foundation
2. analysis and formalization of supervised and unsupervised learning methods for the SW
3. analysis and formalization of methods for managing uncertain knowledge representation and uncertainty reasoning for the SW

Definition and theoretical foundation of similarity measures for Semantic Web representations

The notion of similarity has been active, prominent and seminal in the areas of cognitive psychology, knowledge acquisition, data management and information organization for a long time. In the last years, the importance of the notion of similarity has been highlighted also in the SW context since most of the ontology related operations such as ontology learning, alignment, ranking, population etc. are grounded on an idea of similarity. However, the definition of similarity or dissimilarity measures[1] in the SW context is a topic that has not been deeply investigated. One of the main problems is the necessity to cope with the high expressive power of Description Logics (DLs), that are the theoretical foundation of OWL that is the standard representation language in the SW, and the ability to deal with the semantics of the compared objects (concepts, individuals, ontologies), that are a missing aspects in the existing works [EW15].

The research activity of Claudia d'Amato addressed the problems of assessing the similarity between concept descriptions and/or individuals in expressive DL knowledge bases (KBs). As a first solution, an extensional based approach was proposed [NC5]. Two concepts are highly similar if their concept extensions (the set of individuals that are instance of the considered concepts) largely overlap. The concepts are dissimilar if their extensions are disjoint or weakly overlap. This measure failed in comparing individuals (by preliminarily computing the Most Specif Concepts[2] (MSC))[IW17]. This was because the MSCs are so specific that most of the time they cover only the considered individuals and do not include any other individuals in their extensions. To cope with this problem, an alternative similarity measure was defined [IW17,NW5,IC37]. Grounded on the idea that concepts that are defined by almost the same sub-concepts are probably similar, the measure assessed the similarity between concept descriptions (MSCs are indeed concept descriptions) by recursively comparing the similarity of the subconcepts. This measure was defined for ALC normal form concept descriptions and it was based both on the concept structures (since subconcepts are considered) and on the concept semantics (since subconcepts are compared by comparing their extensions). Even if these measures were able to assess the similarity between concepts and individuals, they were defined for a particular DL (ALC logic) and were not language independent. In [P2], a language independent similarity measure for assessing the similarity between individuals was proposed. It was grounded on the intuition that, on a semantic level, similar individuals should behave similarly with respect to the same concepts. Individuals were compared on the grounds of their behavior (being instance of) with respect to a given set of hypotheses, that is a collection of concept descriptions acting as discriminating features expressed in DL language. As such, this measure totally depends on the semantic aspects of the individuals in the KB. In [IC19], d'Amato et al. put the influence of the ontological knowledge in assessing the semantic similarities between entities (concepts, individuals) on a solid foundation with objective criteria. The intended behavior of a semantic similarity measure when it is applied to ontological knowledge was discussed, hence a set of criteria that a similarity measure has to satisfy in order to be defined "semantic" were formalized.

Machine Learning methods for Semantic Web

Most of the research in the SW focuses on deductive-based reasoning methods with the goal of making explicit the knowledge that is implicitly contained in an ontology. The standard and non-standard inference procedures of DLs are the main examples in this direction. However, important tasks that are likely to be provided by new generation knowledge-based systems, such as classification, ontology construction, ontology revision, ontology population, ontology evolution

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1 Since a dissimilarity measure could be obtained from a similarity measure (as argued in H.H. Bock and E. Diday. Analysis of symbolic data: exploratory methods for extracting statistical information from complex data. Springer -Verlag, 2000) only the notion of similarity measure will be considered in the following

2   The most specific concept of a given individual is the concept most specific with respect to the subsumption relationship of which the individual is instance of.

can be supported by machine learning methods and specifically by inductive reasoning and learning methods[IJ4]. Moreover, any kind of deductive reasoning can be performed in presence of inconsistent KBs that is a likely case in a distributed context such as the SW. In general, inductive learning and knowledge discovery have received less attention in the SW. Moreover, in the perspective of knowledge/functionality sharing and reuse, new inference services are required, aiming at noise-tolerant and efficient forms of reasoning. From this perspective, unsupervised learning methods, such as clustering methods, and supervised learning methods, such as instance-based classification methods, applied to multi-relational domains appear well suited. Particularly similarity-based methods are known to be both very efficient and noise-tolerant. The ultimate goal of focussing on supervised and unsupervised learning techniques has been the realization of methods that are able to induce new knowledge that is not logically derivable, making possible to reason on ontologies even in presence of inconsistency and/or noise, and learning new concept descriptions for enriching existing ontologies.

In the supervised learning setting, the formalized problem was: given a DL knowledge base, classifying all the individuals of the KB: a) with respect to the concepts (primitive and defined) declared in the KB [IC35,NW1] (with final goal of performing inductive concept retrieval); b) with respect to query concepts generated on the fly, starting from the concepts declared in the ontological KB (with the final goal of performing inductive query answering) [IC27,IC24]. Existing state of the art classification algorithms such as k-NN, Reduced Coulomb Energy (RCE) network have been casted for the purpose [IJ2,IC6,IC34,IC13,IJ7]. Generally these algorithms adopt an underlying CWA and a binary classification setting. If a multi-class classification problem is considered, the classes are assumed to be disjoint. These assumptions are still not valid in the considered ontological representation where: a) the OWA is adopted; b) an individual could be instance of more than one concept (multi-class classification) at the same time and as such, classes cannot be assumed to be disjoint. These issues were solved by decomposing the multi-class classification problem into a set of ternary classification problems (one classification for each concept) where the case of unknown information due to the OWA is explicitly treated. Additionally, the adoption of the OWA does not allow to use the classical metrics (such as predictive accuracy, precision and recall) for the evaluation of the classification results. This is because the new induced knowledge (not logically derivable) was signed as mistakes while this constitutes completely new knowledge extracted from the evidence of data. Hence alternative metrics were also defined [IC24,IJ9,IW8]. The adoption of *kernel methods*, and specifically *Support Vector Machine* (SVM) for performing class membership classification was also considered as they are well known efficient inductive learning methods. They can be developed in a modular way distinguishing between: the kernel machine and the kernel function. The kernel machine encapsulates the learning task and the way in which a solution is looked for, the kernel function encapsulates the hypothesis language, i.e., how the set of possible solutions is made up. Kernel functions can be informally defined as similarity functions that are able to work with high dimensional feature spaces. From a computational point of view, kernel methods map, by means of the kernel function, the original feature space of the considered data set into a high dimensional feature space where the execution of the learning task is easier. This is done without explicitly computing the mapped data. The kernel trick is to define a *positive definite kernel* on any feature set. For such functions it is know that there exists an embedding of the feature set in a linear space such that the kernel on the elements of the set corresponds to the inner product in this space. Particularly, SVMs are classifiers that, by the use of a mapping function, map the training data into a higher dimensional feature space where they can be classified using a linear classifier. Moving from this consideration, and exploiting the theoretical result on convolution kernel for composite objects proposed by Haussler[3], different kernel functions for DLs having different expressiveness have been defined [IC36,IC31,IC26,IC17] and plugged into a SVM for performing inductive concept retrieval and query answering [IJ9,IC17]. The experience

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3   D. Haussler. Convolution kernels on discrete structures. Technical Report UCSC-CRL-99-10, Department of Computer Science, University of California - Santa Cruz, 1999.

matured in the similarity-based classification and kernel methods was exploited for focusing on the problem of resource ranking [IW15,NW3,IC7,IC9] and assessing the nature of uncertain mapping in the ontology matching process[IJ5].

Unsupervised learning methods have been investigated since their benefits in the context of semantically annotated knowledge bases are manifold. Claudia d'Amato focused on the multi-relational extensions of effective clustering techniques intended for grouping similar resources with respect to a semantic similarity measure which is tailored for the DL representations. In [IW10], a hierarchical agglomerative conceptual clustering method, exploiting the complete-link approach was proposed and intensional cluster descriptions were generated by computing the *Good Common Subsumer* of the semantic descriptions of the resources in a cluster. The ultimate goal was to improve the efficiency of the resource retrieval task by clustering the semantic descriptions of the available resources and by exploiting the obtained hierarchical structure as an index for making faster the retrieval process. In [IJ3], a similar approach has been exploited for decreasing the complexity of the deductive concept retrieval procedure by recurring, as much as possible, to the computation of the subsumption relationship and minimizing the number of instance checking (which has a higher computational complexity with respect to subsumption for expressive DLs) that are necessary for assessing the concept extension. An alternative hierarchical partitional clustering algorithm, grounded on an extension of the effective *Bisecting k-means* algorithm, was proposed in [NC2,IC32] with the goal of discovering new concepts. Since as for the original method, a fixed number k of clusters was required, further studies have been conducted for coping with this problem. A first proposed solution consisted in a partitional method where partitions are performed up to reaching a minimal threshold value for *cluster quality,* making any further bisection useless. Successively, methods grounded on the genetic algorithms [IJ10] and stochastic search [IJ8] were proposed for automatically converging towards the optimal number of clusters without predefining it and without using any threshold. In [IC25], the exploitation of clustering methods for detecting concept drift and new emerging concepts in an ontology was studied since an ontology is not a static entity, rather it may evolve over the time because new concepts and/or instances are added.

Conceptual clustering algorithms are also exploited for the concept learning task, with the ultimate goal of enriching/refining existing ontologies. In [IC25], intentional cluster descriptions of discovered groups (that are candidate new concepts) are learnt and added to the existing ontology, thus semi-automatizing the ontology refinement task. The intensional descriptions are learnt by computing the *least common subsumer* of the *most specific concepts* describing the resources (individuals) in a given cluster. For expressive DLs, the adoption of suitable refinement operators [15] for learning cluster descriptions was studied. Further approaches for performing concept learning were investigated for semi-automatizing the ontology learning and refinement[4] task. In [IC21] a FOIL-like algorithm was presented to be applied to general DL languages and the theoretical aspects of learning with the inherent incompleteness underlying the OWA was studied. In [IC12,IC5], the focused concept learning problem was solved by setting up a method for learning *decision trees* customized for DL representation. The advantage of this second approach was that the obtained terminological decision tree could be exploited for inductively classifying the individuals that are instance of the learnt concept or the target concept. A different problem was analyzed in [IC10,IC8]. The semantic aggregation of the query answering results was studied. Indeed, query answering on a wide and heterogeneous environment such as the Web can return a large number of results that can be hardly manageable by users/agents. The adoption of grouping criteria of the results could be of great help. Most of the proposed methods for aggregating results on the (Semantic) Web are mainly grounded on syntactic approaches and cannot be of significant help when the values instantiating a grouping criterion are all equal (thus creating a unique group) or at the contrary almost all different (thus creating one group for each answer). In [IC10,IC8]

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4 Usually with "Ontology Learning" it is intended the task of automatically building (a sketch of) an ontology having documents as source of information [52]. In this context, for ontology learning it is meant the automatic construction of (a sketch of) an ontology having semantic annotated resources as input data.

d'Amato et al. proposed a novel approach that is able to overcome such drawbacks. Given a query in the form of a conjunctive query, grouping is grounded on the exploitation of the semantics of background ontologies during the aggregation of the query results. Specifically, a solution where, in a deductive modality, answers are grouped taking into account the subsumption hierarchy of the underlying knowledge base was proposed. Furthermore, the inspection and navigation of the results similarly to a faceted search was also introduced.

Uncertain knowledge and uncertainty reasoning for the Semantic Web

Another important problem that has emerged in the last years concerns how to manage the inherent uncertainty of the Web. The importance of the problem has been highlighted by the formation of a W3C incubator group[5]. Here, with the term "uncertainty", a variety of aspects are meant such as incompleteness, vagueness, ambiguity. To face this problem several proposals have been formulated. They mainly concern with: a) how to represent uncertain knowledge and b) how to reason in presence of uncertain knowledge. These proposals are basically grounded on extending standard SW representation languages with probabilistic or fuzzy approaches. Their main drawback is its inability to scale on large set of data. Furthermore, these approaches generally assume that probabilistic and/or fuzzy information is usually available and as such, it resulted to be a quite strong assumption with respect to the reality. Only very recently some efforts in learning probabilistic ontologies have been done. Nevertheless, these works do not take into account the underlying OWA characterizing the DL representation, rather an implicit CWA is adopted.

Claudia d'Amato focused on the problem of uncertain knowledge representation and uncertainty reasoning for the SW in the last years. In this context she contributed with the formalization of a new framework for representing uncertain knowledge by the integrating Bayesian Networks with DL representation [IC18]. Specifically, a probabilistic generalization of the *DL-Lite*[6] description logic integrating Bayesian networks was presented. The new probabilistic description logics allow for flexibly combining terminological and assertional pieces of probabilistic knowledge. This work shows that the new probabilistic description logics are rich enough to properly extend both the *DL-Lite* description logics as well as Bayesian networks. Furthermore the complexity of the main reasoning operators such as satisfiability checking and query processing were also analyzed. Claudia d'Amato also investigated the *Rough-DLs* framework for representing uncertain knowledge and enriched this framework by defining two contextual discernibility relations [IW9]. Indeed in the Rough-DL framework the discernibility relations are mentioned but any practical and/or formal definition is given for them.

Claudia d'Amato also investigated how to build probabilistic knowledge bases automatically. Inductive learning methods could be fruitfully exploited for for the purpose, for instance by learning the probability that: an inclusion axiom, a relationship between two individuals, a concept assertion hold. Since the conclusions drawn from inductive reasoning are typically uncertain, this uncertainty could be explicitly treated. The probability of an inductive result (for instance an individual belonging to a concept) could be computed. The explicit treatment of the uncertain results gives several advantages: 1) a measure of the reliability of the inductive results can be given; 2) computed probabilities can be exploited for ranking the answers of a query; 3) new queries may be formulated by including the likely of an information/event; 4) probabilistic ontologies can be automatically built. In [IJ2,IC6,IC24] a way for assessing the probability that a certain concept membership hold was presented. In [IW1], a Statistical Relational Learning method designed for learning terminological naive Bayesian classifiers was defined. This method estimates the probability that a generic individual belongs to a given target concept given its membership to a set of DL concepts. The novelty of this approach is given by the explicit treatment of the lack of knowledge (due to the OWA) that is consistently handled during the learning process by considering different models about the varying nature of the missing knowledge itself.

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5   http://www.w3.org/2005/Incubator/urw3/
6   *DL-Lite* is a family of tractable description logics lying between the semantic web languages RDFS and OWL Lite.

2.2 Honors and Awards

- Best Paper award at EKAW 2014. P. Minervini, C. d'Amato, N. Fanizzi and F. Esposito. *Adaptive Knowledge Propagation in Web Ontologies.*

- Best Workshop Paper award at URSW 2014 co-located with ISWC 2014. P. Minervini, C. d'Amato, N. Fanizzi, V. Tresp. *Learning to Propagate Knowledge in Web Ontologies.*

- Best Paper award at IEEE ICSC 2012. N. Fanizzi, C. d'Amato. F. Esposito. *Towards Numeric Prediction on OWL Knowledge Bases through Terminological Regression Trees.*

- Best Paper award at ACM SAC 2010 - SWA Track. F. Esposito, N. Fanizzi, C. d'Amato. *Recovering Uncertain Mappings through Structural Validation and Aggregation with the MoTo System.*

- PhD Thesis "*Similarity-based Learning Methods for the Semantic Web*" nominated by the Italian Commission for the AI*IA award 2007 as one of the Best Italian PhD Thesis in Artificial Intelligence

- Best best student paper award at the Italian Symposium on Advanced Database Systems (SEBD 2007) offered by Pearson Education. C. d'Amato "*Constraint Hardness for Modeling, Matching and Ranking Semantic Web services*".

- Research Grant for three years for being a PhD student at the University of Bari (XIX Round), January 2004

2.3 Invited Talks

Invited Talks at International Conferences
- 25 – 27 January 2017 – *"Machine Learning for the Semantic Web"* - International Conference on Knowledge Extraction and Management (EGC 2017).

Invited Talks at International Workshops
- 18 October 2014 - *"Machine Learning for Ontology Mining: Perspectives and Issues"* - 11th OWL: Experiences and Directions Workshop (OWLED 2014)
- 9 October 2012 - *"Is the current data-driven world going to kill ontologies? Are we navigating towards a shallow Web of Data?"* - Round Table at the International Workshop on "Ontology Engineering in a Data-Driven World (OEDW 2012)" - co-located with the Int. Conference on Knowledge Engineering and Knowledge Management (EKAW 2012)
- 7 November 2007 - *"Ontologies: An Introduction"* - EMBRACE Workshop

Invited Talks at Dagstuhl Seminars
- 18 September 2014 - *"On extracting Rules for: enriching ontological knowledge bases, complementing heterogeneous sources of information, empowering the reasoning process"* - Dagstuhl Seminar: "Neural-Symbolic Learning and Reasoning" - Dagstuhl Schloss
- 31 May 2012 – *"Grouping SemanticWeb Query Results: Requirements and Possible Solutions"* - Seminar: "Cognitive Approaches for the Semantic Web" - Dagstuhl Schloss

- 25 July 2010 - *"(Conceptual) Clustering for discovering Concept Drift and Concept Formation from Description Logics Knowledge Bases"* - <u>Dagstuhl Seminar</u>: "Learning Paradigms in Dynamic Environments" - Dagstuhl Schloss

Invited Talks at Summer Schools

- 19 July 2016 - *"Knowledge Discovery for the Semantic Web under the Data Mining Perspective"* - 12th International Semantic Web Summer School (SSSW'16), Bertinoro, IT 17-23 July 2016
- 8 July 2015 - *"Knowledge Discovery for the Semantic Web: Peculiarities and Main Issues"* - 11th Int. Semantic Web Summer School (SSSW 2015), Bertinoro, Italy 5 -11 July 2015

Invited Seminars at Research Institutes

- 22 April 2008 - *"Inductive Reasoning on Ontologies: Similarity-Based Approaches"* - Information Engineering Department - University of Modena e Reggio Emilia
- 15 October 2007 - *"Similarity-based Learning Methods for the Semantic Web"* - IRST - Istituto Trentino di Cultura - Trento
- May 2006 - *"Similarity and Dissimilarity Measures for Concept Descriptions in Ontological Knowledge"* - University of Milan – Department of Information Technology (Crema)

Invited Seminars at Research Institutes during Invited research Stays

- 12 March 2015 – *"On extracting Rules from Ontological Knowledge Bases: Purposes and Approach"* – INRIA Sophia-Antipolis (during the invited stay)
- 19 February 2015 – *"Inductive Learning for the Semantic Web"* – INRIA Sophia-Antipolis
- 22 July 2011 - *"(Dis-)Similarity Measures for Description Logics Representation"* - Institute of Computing Science - Poznan University of Technology
- 21 July 2011 - *"(Conceptual) Clustering methods for the Semantic Web: issues and applications"* – Institute of Computer Science - Poznan University of Technology

2.4 Research Activities at Foreign Research Institutes

In the section, are reported: invited research stays and activities as a referee for research project proposals. As regards additional research collaborations on various capacities with others international research groups please refer to the section "Participation in International Research and Scientific Interest Groups ".

2.4.1 Invited Research Stays

- **January – March 2015:** *invited researcher*[7] at INRIA - Research Center of Sophia-Antipolis (France) - Wimmics research team, working with Dr. Fabien Gandon (leader of the research team) and Prof. Andrea G. B. Tettamanzi.
- **October 2013:** *invited researcher* at University of Poznan (Poland) - Laboratory of Operational Research and Artificial Intelligence, Institute of Computing Science working with Dr. Agnieszka Lawrynowicz
- **March – April 2013:** *invited researcher* at the University of Koblenz-Landau (Germany) working with Prof. S. Staab, head of WeST- Institute of Web Science and Technologies
- **September – October 2012:** *invited researcher* at University of Oxford – Department of Computer Science for working with Prof. Thomas Lukasiewicz

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7 **Salary and travel costs payed by the hosting university. This apply to all invited reearch stay cases.**

- **March – May 2012:** *invited researcher* at Fondazione Bruno Kessler (FBK) research organization (Trento), Data & Knowledge Management (DKM) unit working with Dr. Luciano Serafini (head of the unit)
- **June 2011:** *invited researcher* at University of Poznan (Poland) - Laboratory of Operational Research and Artificial Intelligence, Institute of Computing Science working with Dr. Agnieszka Lawrynowicz
- **February – April 2008:** *invited researcher* at the University of Koblenz-Landau (Germany) working with Prof. Steffen Staab, head of WeST- Institute of Web Science and Technologies
- **February – May 2007:** *invited researcher* at the University of Koblenz-Landau (Germany) working with Prof. Steffen Staab, head of WeST- Institute of Web Science and Tech.
- **January – June 2006:** *visiting researcher* at the University of Koblenz-Landau (Germany) working with Prof. S. Staab, head of WeST- Institute of Web Science and Technologies

2.4.2 Referee Service for Project Proposals

- National Fund for Scientific and Technological Development (FONDECYT) of the Chilean National Commission for Scientific and Technological Research (CONICYT) – Call 2014
- European Coordinated Research on Long-term Challenges in Information and Communication Sciences & Technologies ERA-NET (CHIST-ERA) Call 2013 – topic "Adaptive Machines in Complex Environments"

2.5 Participation in International Research and Scientific Interest Groups

Scientific Interest Groups

○ **Invited Member for** the Knowledge Representation and Reasoning working group of the Technical Committee on Artificial Intelligence of the International Federation for Information Processing (IFIP) (2015 - today)
○ **Invited Expert for** the W3C Uncertainty Reasoning for the World Wide Web Incubator Group (2007-2009)
○ **Invited Member for** the IEEE "Semantic Web" Task Force

Research Groups

Claudia d'Amato has/had scientific collaborations with the following research institutes. For each research institute the main contact person is specified:

○ **University of California Santa Cruz – USA** (Prof. Lise Getoor),
○ **Siemens/Ludwig Maximilian University of Munich - Germany** (Prof. Volker Tresp),
○ **George Mason University - USA** (Dr. Paulo G. Costa, Prof. Kathryn Blackmond Laskey),
○ **MITRE corporation - USA** (Ken Laskey),
○ **National University of Ireland, Galway / IT Dept & DERI - IE** (Dr. Matthias Nickles),

- **CNR STLab - Rome** (Prof. Aldo Gangemi and Dr. Valentina Presutti),
- **University of Cape Town – South Africa** (Dr. Maria Keet),
- **University of Mannheim - Germany** (Dr. Johanna Voelker, Prof. Heiner Stuckenschmidt),
- **University of Economics - Czech Republic** (Prof. Vojtech Svatek),
- **University of Zurich - Switzerland** (Prof. Abraham Bernstein, Dr. Thomas Scharrenbach),
- **Swiss Federal Institute for forest, snow and landscape research (WSL) – Switzerland** (Prof. Rolf Grutter, Dr. Bettina Waldvogel)
- **Technical University of Vienna – Austria** (Prof. Axel Polleres, Dr. Marta Sabou)
- **Technical University of Dresden – Germany** (Prof. Sebastian Rudolph),
- **Knowledge Media Institute – UK** (Dr. Mathieu D'Aquin),
- **University of Calabria – Italy** (Dr. Bettina Fazzinga),
- **Wright State University – USA** (Prof. Pascal Hitzler),
- **University of California – USA** (Prof. Krzysztof Janowicz),
- **University of Passau – Germany** (Siegfried Handschuh),
- **University of Fribourg - Switzerland** (Prof. Philippe Cudré-Mauroux)
- **University of Liverpool – UK** (Dr. Valentina Tamma)
- **University of Potsdam** (Dr. Harald Sack),
- **Linköping University – Sweden** (Dr. Eva Blomqvist),
- **Catholic university of Leuven – Belgium** (Prof. Bettina Berendt)
- **Jozef Stefan Institute – Slovenia** (Prof. Dunja Mladenic, Prof. Marko Grobelnik)
- **Universidad Politécnica de Madrid – Spain** (Prof. Oscar Corcho, Prof. Asunción Gómez Pérez, Dr. Mari Carmen Suárez-Figueroa)

Fellowships
- **Member of** the ACM Special Interest Group on Applied Computing (2006, 2010, 2016)
- **Member of** Design Semantics, Special Interest Group of the International Association for Ontology and its Applications (IAOA) (2015)
- **Member of GULP:** Italian Group of Res. and Users of Logic Programming (2005)
- **Member of AI*IA:** Italian Association for Artificial Intelligence (2007, 2008, 2010)
- **Member of AICA**: Italian Ass. for Informatics and Machine Calculus (2004, 2005)

2.6 Organization, Coordination, Supervision of Research Activities

- **Organizer and Supervisor** of the research activities, concerning Rule Discovery from Ontologies, of Tran Duc Minh, PhD Student at the University of Nice-Sophia Antipolis (2015 - today)
- **Organizer and Supervisor** of the research activity of Dr. Thomas Scharrenbach – University of Zurich, invited researcher at the University of Bari – Computer Science Department (March 2010)
- **Co-Supervisor** of the research activity of Dr. Agnieszka Lawrynowicz – Poznan University, invited researcher at the University of Bari – Computer Science Dept. (November 2009)
- **Organizer and Supervisor** of the research activities, concerning the Knowledge Discovery topic, of 60 PhD Students at the 11th International Summer School on Ontology Engineering and the Semantic Web (2015) and of 53 PhD Students at the and 12th International Summer

School on Ontology Engineering and the Semantic Web (2016)
- ✍ **Co-Supervised thesis at Computer Science Department, University of Bari:**
  - ○ PhD Thesis: 2 (Pasquale Minervini - cycle XXV, Giuseppe Rizzo cycle XXVIII)
- ✍ **Co-Supervisor of post-docs at Computer Science Department, University of Bari:**
  - ○ Post-Docs : 2 (Pasquale Minervini (2014-2015), Giuseppe Rizzo (April 2015 - Today)

2.7 Research Projects

The Research projects Claudia d'Amato has been involved with are reported in the following. They are grouped in the categories: European, National, Regional, Local University Funding. For each project, the role that Claudia d'Amato has assumed is specified.

European
- • **Role:** Scientific Consultant

Project: *e-LICO "e-Laboratory for Interdisciplinary Collaborative Research in Data Mining and Data-Intensive Sciences"* (2009-2012) **(**EU-FP7 Collaborative Project Theme ICT-4.4: Intelligent Content and Semantics**)**
- • **Role:** Participant

Project: *NeOn "Lifecycle Support for Networked Ontologies"* (2006-2010) (EU-FP6 Project IST-2005-027595)
- • **Role:** Participant

Project: *COLLATE "Collaborator for Automation, Indexing and Retrieval of Digitalized Historical Archive Material"* (2000-2003) (EU-FP5-IST; Sub-program Area: Digital Preservation of cultural heritage; IST-1999-20882)
- • **Role:** Participant

Project: *ASSO "Analysis System of Symbolic Official Data"* (2001-2003) (EU-FP5; IST -2000-25161)
- • **Role:** Participant

Project: *"SPIN: Spatial Mining on Data of Public Interest"* (2000-2002) (EU-FP5; IST-1999-10536)

National
- • **Role:** Project leader for the unit

Project: *LOGIN "LOGistica INTegrata"* **(**2012-2015**)** (PII INDUSTRY 2015), announcement "New Technologies for the Made in Italy"
- • **Role:** Participant

Project: *"Sintesi automatica di modelli astratti a partire da dati temporali o spaziali"* (MIUR Project - PRIN 2006)
- • **Role:** Participant

Project: *MBLab "Molecular Biodiversity Laboratory initiative"* (2007-2010) (FAR Project – DM 19410)
- • **Role:** Technical project leader for the unit and co-author of the proposal

Project: *Puglia@Service - L'ingegneria dei servizi Internet-based per lo sviluppo strutturale di un territorio "intelligente"* **(**2012-2015) PON Research and Competitiveness, Operative Program 2007-2013
- • **Role:** Technical project leader for the unit and co-author of the proposal

Project: *VINCENTE "Virtual collective INtelligenCe ENvironment to develop sustainable Technology Entrepreneurship ecosystems"* (2012-2015) PON Research and Competitiveness,

Operative Program 2007-2013
- **Role:** Project leader

Project: *DIPIS: strategic project "Distributed Production as Innovative System"* Financed by Apulia Region in the context of the Agreement with Miur and MISE (2007-2011)
- **Role:** Participant

Project: *"Metodi e Tecniche di apprendimento automatico per il Semantic Web"* (MURST Project ex 40%)

Regional
- **Role:** Principal Investigator and Scientific Responsible

Project: FIR – Future In Research, "Computer-mediated collaboration in creative projects" (Regional Project 2016-2019)
- **Role:** Project leader and main author of the proposal

Project: *Semantic-PA: "Tecnologie di Semantic Web per la Pubblica Amministrazione"* acquired by Claudia d'Amato (Regional Project 2009-2011)
- **Role:** Participant

Project: *DDTA: "Distretto digitale a supporto della filiera produttiva del tessile – abbigliamento"* (Regional Project 2006-2008)

Local University Funding
- **Role:** Participant

Project: *"Metodi induttivi per la predizione di relazioni su basi di conoscenza ontologiche"* (Ateneo Project - Università degli Studi di Bari ex 60% 2010)
- **Role:** Participant

Project: *"Metodi e Tecniche di Semantic Web Mining"* (Ateneo Project - Università degli Studi di Bari ex 60% 2009)
- **Role:** Participant

Project: *"Apprendimento Automatico di conoscenza in forma ontologica in Logiche del primo ordine"* (Ateneo Project - Università degli Studi di Bari ex 60% 2007)
- **Role:** Participant

Project: *"Modelli computazionali di Apprendimento Automatico per formalismi ibridi del 1° ordine"* (Ateneo Project - Università degli Studi di Bari ex 60% 2006)
- **Role:** Participant

Project: *"Apprendimento induttivo per la annotazione automatica su base semantica di documenti"* (Ateneo Project - Università degli Studi di Bari ex 60% 2005)
- **Role:** Participant

Project: "Astrazione e Logica descrittiva in Apprendimento Automatico" (Ateneo Project - Università degli Studi di Bari ex 60% 2004)

2.8 Professional Services

2.8.1   Editorial Boards of international Journals and Books

⚘ **Editorial Board Member of**
- ○ Semantic Web Journal **(**SWJ) - (since 2009)
- ○ International Journal of Web Semantics (JWS) - (since 2014)

- International Journal on Semantic Web and Information Systems (IJSWIS) - (since 2014)
- International Journal On Advances in Intelligent Systems (IARIA Journals) - (since 2012)
- International Journal of Intelligent Systems and Applications (IJISA) - (since 2009)

⚔ Guest editorships

- Semantic Web Journal – Special Issue on Machine Learning for Knowledge Base Generation and Population (June 2016 - today)
- the International Journal on Semantic Web and Information Systems - Special Issue on Induction on the Semantic Web (2010 - 2011)
- Semantic Web Journal - Special Issue on Inductive Reasoning and Machine Learning for the Semantic Web (2010-2012)

⚔ Books Reviewer

- G. Tecuci, D. Marcu, M. Boicu, D.A. Schum. Knowledge Engineering: Building Cognitive Assistants for Evidence-based Reasoning. Cambridge University Press (Ch. 1, 6 – 8) (2016)

2.8.2   Organization and Coordination of Research Events

⚔ **Program Chair of the 16th International Semantic Web Conference** (ISWC'17)

⚔ **Program Chair of the 10th European Semantic Web Conference (**ESWC'14**)**

⚔ **Vice-Chair of the 8th International Semantic Web Conference (**ISWC'09**)**

⚔ **PhD Symposium Chair at the 11ᵗʰ European Semantic Web Conference** (ESWC'15)

⚔ **Workshops and Tutorials Chair at**
- the 11th International Semantic Web Conference (ISWC 2012)
- the 18th International Conference on Knowledge Engineering and Knowledge Management (EKAW'12)

⚔ **Workshop Chair at** the 6ᵗʰ IEEE Int. Conference on Semantic Computing (ICSC 2012)

⚔ **Track Chair for:**

- "Machine Learning" track at the 9th Extended Semantic Web Conference (ESWC'16)
- "Machine Learning" track at the 9th Extended Semantic Web Conference (ESWC'13)
- "Machine Learning" track at the 8th Extended Semantic Web Conference (ESWC'12)

⚔ **Organizing Committee Member of**

- the International Workshop on Linked Data for Information Extraction at ISWC (LD4IE'16, LD4IE'15, LD4IE'14, LD4IE'13)
- the International Uncertainty Reasoning Workshop at ISCW (URSW'16, URSW'15, URSW'14, URSW'13, URSW'11, URSW'10, URSW'09, URSW'08, URSW'07)
- the International Workshop on Cross-fertilizing diverse Domains with and within the Semantic Web at ISWC (Diversity++'15)
- the Int. Work. on Linked Data for Knowledge Discovery ECML/PKDD (LD4KD'15)
- the Int. Workshop on Data Mining on Linked Data at ECML/PKDD (DMoLD'13)

- ○ the International Workshop on Inductive Reasoning and Machine Learning on the Semantic Web at ESCW (IRMLeS'11, IRMLeS'10, IRMLeS'09)

- ↗ **Publicity Chair for** Discovery Science International Conference (DS'16)

2.8.3 Program Committees

- ↗ **Steering Committee Member of the European Semantic Web Conference** (ESWC'17, ESWC'16, ESWC'15**)**

- ↗ **Senior Program Committee Member of:**
  - ○ International Conference on Semantic Systems (SEMANTiCS'15)
  - ○ 29th Conference on Artificial Intelligence (AAAI-15) - Track on AI and the Web
  - ○ Int. Semantic Web Conference (ISWC'14) - Replication, Benchmark and Data Track

- ↗ **Program Committee Member of**

International Conferences:
  - ○ International Semantic Web Conference (ISWC'17, ISWC'16, ISWC'15, ISWC'14, ISWC'13, ISWC'12, ISWC'11, ISWC'10, ISWC'09, ISWC'08)
  - ○ ACM International Symposium On Applied Computing (SAC'17, SAC'16, SAC'15, SAC'14, SAC'13, SAC'12, SAC'11, SAC'10) - Semantic Web and Application track (SWA'17, SWA'16, SWA'15, SWA'14, SWA'13, SWA'12, SWA'11, SWA'10) – Knowledge Representation and Reasoning track (KRR'17)
  - ○ IEEE International Conference on Semantic Computing (ICSC,17, ICSC'16, ICSC'15, ICSC'14, ICSC'13, ICSC'12)
  - ○ International Conference on Knowledge Engineering and Knowledge Management by the Masses (EKAW'16, EKAW'14, EKAW'12, EKAW'10)
  - ○ Extended Sem. Web Conf. (ESWC'16, ESWC'15, ESWC'13, ESWC'12, ESWC'11)
  - ○ Europ. Conf. on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML/PKDD'16, ECML/PKDD'15, ECML/PKDD'10, ECML/PKDD'09)
  - ○ International ACM Web Science Conference (WebSci'2016)
  - ○ Int. World Wide Web Conf. (WWW'16, WWW'15, WWW'13, WWW'12, WWW'11)
  - ○ International Joint Conference on Neural Networks (IJCNN'16, IJCNN'15, IJCNN'14)
  - ○ Int.SEMANTiCS conference (SEMANTiCS'16, SEMANTiCS'15, SEMANTiCS'14)
  - ○ Int. Web Rule Symposium: Research Based and Industry Focused (RuleML'16, RuleML'15, RuleML'14, RuleML'13, RuleML'12, RuleML'11, RuleML'10, RuleML'09)
  - ○ International Conference of the Florida Artificial Intelligence Research Society - Uncertain Reasoning Special Track (FLAIRS'16, FLAIRS'15, FLAIRS'14)
  - ○ IEEE Int. Conf. on Internet of Things (iThings'15, iThings'13 – Intel. Manag. Track)
  - ○ the International Conference on Semantics, Knowledge and Grids (SKG 2015)
  - ○ International Conference on Man-Machine Interactions (ICMMI'15, ICMMI'13)
  - ○ Int. Joint Conference on Artificial Intelligence (IJCAI'15, IJCAI'13, IJCAI'11)
  - ○ International Conference on Artificial Intelligence (AAAI'15, AAAI'14, AAAI'13 - AI and the Web: Special Track, AAAI'12 - AI and the Web: Special Track, AAAI'10)
  - ○ International Conference on Web Intelligence (WI'14, WI'13, WI'12, WI'10, WI'09)
  - ○ Int. Conf. on Artificial Intelligence: Methodology, Systems, Applications (AIMSA'14)
  - ○ International Conference on Sustainable Design and Manufacturing (SDM'14)
  - ○ Int. Conference on Knowledge Capture – workshop and tutorials (K-CAP'13)

- Int. Conference on Web Reasoning and Rule Systems (RR'13, RR'11, RR'10)
- Int. Conf. on Sem. Systems and the Sem. Web (I-SEMANTICS'13, I-SEMANTICS'12)
- International Conference on Advanced Collaborative Networks, Systems and Applications (COLLA 2013, COLLA 2012, COLLA 2011)
- European Conference on Artificial Intelligence (ECAI'12, ECAI'10)
- Int. Conf. on Business Intelligence and Technology (BUSTECH 2012, BUSTECH 2011)
- International Conference on Internet Technologies & Society (ITS 2012)
- Joint International Semantic Technology Conference (JIST'11)
- International RuleML Challenge (RuleML Challenge 2011, 2010)
- International Web Rule Symposium (RuleML@BRF-2011)
- International Conference on Advanced Intelligence (ICAI'10)
- Int. IEEE Conf. on Signal-Image Tech. and Internet-based Systems (SITIS'10, SITIS'09)

PhD symposiums and Summer Schools
- Doctoral consortium at the International Semantic Web Conference (ISWC'16, ISWC'15)
- ESWC Ph.D. Symposium (2016, 2015)
- OnTheMove Academy (OTMA'16) at the OntheMove Federated Conferences
- Student Abstract at the International Conference on Artificial Intelligence – (AAAI'15, AAAI'14, AAAI'13)
- Mentoring Lunch at the International Semantic Web Conference (ISWC'14)
- European Starting AI Researcher Symposium (STAIRS'12, STAIRS'10)
- Doctoral consortium at the International Symposium on Rules (RuleML 2011)
- Reasoning Web Summer School 2011

Special Issues of International Journals
- International Journal of Virtual Communities and Social Networking - Special Issue on Social media and networks for multimedia content management (2014 - 2015)
- Semantic Web Journal – Spec. Issue on Web Reasoning and Rule Systems (2013 - 2014)
- Semantic Web Journal – Spec. Issue on Cognitive Science and the Semantic Web (2012)
- Semantic Web Journal – Spec. Issue on Semantic Social Media Dynamics (2013 - 2015)
- Transactions in GIS - Special Issue on Semantic Similarity Measurement and Geospatial Applications (2008 - 2009)

International Workshops
- 13th OWL: Experiences and Directions Workshop and 5th OWL Reasoner Evaluation Workshop (OWLED - ORE 2016) co-located with the EKAW'16
- International Workshop on Knowledge Discovery and Data Mining Meets Linked Open Data (Know@LOD'16, Know@LOD'15, Know@LOD'14, Know@LOD'13, Know@LOD'12) at ESWC
- International Workshop on Educational Knowledge Management (EKM'16) at ESWC
- Intern. Workshop on LINKed EDucation 2015 (LinkEd 2015) Co-located with ISWC
- the International Workshop on the design, development and use of Knowledge IT Artifacts in professional communities and aggregations (KITA 2015)
- International OWL Reasoner Evaluation Workshop (ORE'15) Co-located with DL'14
- International Workshop on Semantics for Big Data on the Internet of Things (SemBIoT 2014) Co-located with the IEEE International Conference on Big Data
- International Workshop on Neural-Symbolic Learning and Reasoning (NeSy'13, NeSy'12, NeSy'11, NeSy'10, NeSy'09)

- ○ International Workshop on Semantic Media Adaptation and Personalization (SMAP 2014, SMAP 2013, SMAP 2012, SMAP 2011)
- ○ International Workshop on Advances in Sensors and Interfaces (IWASI'13)
- ○ German Workshop on Artificial Intelligence on the Web (AI on the Web'12) at KI'12
- ○ International Workshop on Knowledge Injection to and Extraction from Linked Data (KIELD'10) at EKAW 2010
- ○ International Workshop on Knowledge Acquisition, Reuse and Evaluation at SITIS IEEE conference, (KARE'10, KARE'09)
- ○ International Semantic Web Applications and Perspectives Workshop (SWAP'08)
- ○ Int. IFIP Workshop on Semantic Web & Web Semantic (SWWS'08, SWWS'07)

2.8.4   Reviewing Activities

International Journals
- JIIS: Journal of Intelligent Information Systems
- JMLR: Journal of Machine Learning Research
- APIN: Applied Intelligence Journal
- NEUCOM: International Journal on Neurocomputing
- JDIQ: International Journal of Data and Information Quality
- IJSNM: International Journal of Social Network Mining
- MLJ: Machine Learning Journal
- TKDE: IEEE Transactions on Knowledge and Data Engineering
- ADAC: Advances in Data Analysis and Classification Journal
- JAIR: Journal of Artificial Intelligence Research
- JWS: Journal of Web Semantics
- DKE: Journal of Data and Knowledge Engineering
- ACM Computing Surveys
- TNNLS: IEEE Transactions on Neural Networks and Learning Systems
- JLC: Journal of Logic and Computation
- TIST: ACM Transactions on Intelligent Systems and Technology
- KAIS: Knowledge and Information Systems International Journal
- INS: Journal of Information Sciences
- AAI: Advances in Artificial Intelligence Journal
- SNAM: Social Network Analysis and Mining Journal
- PAA: Pattern Analysis and Applications International Journal
- MPE: Mathematical Problems in Engineering
- KNOSYS: Knowledge-Based Systems International Journal
- IJITDM: International Journal of Information Technology & Decision Making
- IJWET: International Journal of Web Engineering and Technology
- JKE: International Journal of Knowledge Engineering
- JAI: Journal of Applied Intelligence
- IC: IEEE Internet Computing (Magazine)

International Conferences
- CIMK 2016: ACM International Conference on Information and Knowledge Management
- AI*IA 2015, 2013, 2011, 2007, 2005: Congress of the Italian Association for Artificial Intelligence
- DaWaK 2013, 2012, 2011: Int. Conference on Data Warehousing and Knowledge Discovery

- IEA-AIE 2013, 2012, 2010, 2009, 2008, 2005: International Conference on Industrial and Engineering Applications of Artificial Intelligence and Expert Systems
- AIA 2013: International Conference on Artificial Intelligence and Applications
- ICDM 2012, 2010, 2008 , 2006, 2005: IEEE International Conference on Data Mining
- ICAART 2012: International Conference on Agents and Artificial Intelligence
- KES 2012, 2011, 2008, 2007: International Conference on Knowledge-Based and Intelligent Information & Engineering Systems
- ILP 2011, 2008: International Conference on Inductive Logic Programming
- IJCNN 2011: International joint Conference on Neural Networks
- PAKDD 2011: 15th Pacific-Asia Conference on Knowledge Discovery and Data Mining
- ECML/PKDD 2011, 2006, 2008: European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases
- KDD 2011, 2009, 2010: ACM SIGKDD Conf. on Knowledge Discovery and Data Mining
- SEBD 2011, 2007: Italian Symposium on Advanced Database Systems
- KDIR 2010: International Conference on Knowledge Discovery and Information Retrieval
- ESWC 2009, 2008: European Semantic Web Conference
- IIS 2009: 17th International Conference Intelligent Information Systems
- ECDL 2009: 13th European Conference on Digital Libraries
- CIDM 2009: IEEE Symposium on Computational Intelligence and Data Mining
- ADMA 2009: International Conference on Advanced Data Mining and Applications
- SUM 2008: International Conference on Scalable Uncertainty Management
- PAIS 2008: Prestigious Applications of Intelligent Systems
- CIDM 2007: IEEE Symposium on Computational Intelligence and Data Mining
- IRCDL 2007: Italian Research Conference on Digital Library Systems
- AAAI 2006: National Conference on Artificial Intelligence
- WIAMIS 2006: Int. Workshop on Image Analysis for Multimedia Interactive Services
- SDM 2005, 2006: SIAM International Conference on Data Mining
- SAC 2006: ACM Symposium on Applied Computing
- ISMIS 2006: The 16th International Symposium on Methodologies for Intelligent Systems

International and National Workshops
- MCD 2008 at ICDM: 4th Int. Workshop on Mining Complex Data
- SMR2 2008 at ISWC: International Workshop on Service Matchmaking and Resource Retrieval in Semantic Web
- SWAP 2007: Italian Workshop on Semantic Web and Perspectives

3 Teaching Activities

3.1 Thesis Supervision

Co-supervisor of:

- PhD Thesis: 2
- Master Thesis: 7
- Bachelor Thesis: 10

3.2 Teaching activity for PhD students (International Teaching):

- **"Knowledge Discovery" at the 12th Semantic Web Summer School (SSSW 2016) –** Face to face Teaching: 1,5 hour; Support for Reach Project and Mini-project: 13 hours
- **"Knowledge Discovery" at the 11th Semantic Web Summer School (SSSW 2015) –** Face to face Teaching: 1,5 hour; Support for Reach Project and Mini-project: 13 hours

3.3 Lectureship

Lecturer for the courses:
- **"Data Bases"** bachelor degree in Computer Science A.Y. **2016/2017** – Face to face teaching: 7+2 CFU
- **"Data Bases"** bachelor degree in Computer Science A.Y. **2015/2016** – Face to face teaching: 7+2 CFU
- **"Informatics",** bachelor degree in Chemistry A.Y. **2009/2010** - Face2face teaching: 3 CFU

3.4 Teaching Assistance

Teaching Assistant for the courses:
- **Technologies for the Semantic Web**, Master degree in Informatics A.Y. **2016/2017, 2015/2016 -** Face to face teaching: 1 CFU for each A.Y. Overall: 2 CFU
- **Programming Languages**, bachelor degree in Informatics and technologies for software production A.Y. **2011/2012** - Face to face teaching: 2 CFU
- **Artificial Intelligence** Master Degree in Informatics A.Y. **2015/2016, 2014/2015, 2013/2014, 2012/2013, 2011/2012** (Methods and techniques for performing experiments) - Face to face teaching: 1 CFU for each A.Y. Overall: 5 CFU
- **Artificial Intelligence** Master Degree in Informatics A.Y. **2010/2011** (Ontologies and OWL, Description Logics, Reasoning Services in DLs, RDF and SPARQL) - Face to face teaching: 1,5 CFU
- **Artificial Intelligence** Master Degree in Informatics A.Y. **2009/2010, 2008/2009** (Ontologies and OWL, Description Logics, Reasoning Services in DLs) - Face to face teaching: 1 CFU for each A.Y; Overall: 2 CFU
- **Knowledge Engineering and Expert Systems**, Master Degree in Informatics A.Y. **2012/2013, 2010/2011, 2009/2010, 2008/2009, 2007/2008** (practical exercises for the realization of expert systems in clips) - Face to face teaching: 1 CFU for each A.Y; Overall: 5 CFU
- **Programming Languages**, bachelor degree in Informatics and technologies for software production **A.Y. 2008/2009** (practical exercises with JavaCC) - Face2face teaching: 1 CFU
- **Machine Learning course,** Master degree in Computer Science. **A.Y. 2004/2005 -** Face to face teaching: 1 CFU

3.5 Tutoring

Tutoring for the courses:

- **Programming Languages**, bachelor degree in Informatics and technologies for software production **A.Y. 2011/2012 -** Face to face teaching: 1 CFU
- **Algorithms and Structured Data (lab.)**, Master Degree in Informatics **A.Y. 2004/2005 -** Face to face teaching: 2 CFU
- **Knowledge Engineering and Expert Systems (laboratory)**, Master Degree in Informatics **A.Y. 2000/2001 – 2001/2002 – 2002/2003 – 2003/2004 – 2004/2005** - Face to face teaching: 1 CFU for each A.Y; Overall 5 CFU
- **Network Programming (laboratory)**, Master Degree in Informatics. **A.Y. 2003/2004 -** Face to face teaching: 2 CFU

3.6 Tutorials

3.6.1 Tutorials with International Workshops

- 19 December 2007 - *"Inductive Reasoning on Ontologies and Rules for the Semantic Web"* - SWAP 2007

3.6.2 Tutorial for Industries

Claudia d'Amato gave tutorials for the following industries on the topic reported below

- **"UML 1.4: contents and application"** - Omar S.p.A - Allaxia Group. **September 2004 -** Face to face teaching: 16 hours
- **"UML 1.4: contents and application"** - Planetek Italy S.r.l. **July 2004 -** Face to face teaching: 16 hours

4 Institutional Activities and Commissions

- Claudia d'Amato is Guarantor for the Bachelor Degree in "Informatics", Computer Science Department – University of Bari "Aldo Moro"

- Claudia d'Amato has been member of the **AI*IA Scientific Board Member for** the assignment of the award for the best 2013 Italian Master Thesis in Artificial Intelligence **(**AI*IA awards 2013**)**

5 Publications

In the folling the bibliometrics indicators for the research activity of Claudia d'Amato are reported jointly with the reference day and the adopted tool for the indicators computation. Afterwards, the complete list of Claudia d'Amato publications is reported, distinguishing among the following categories: Edited Works, International Journals, Book Chapters, International Conferences, International Workshops, Posters, National Conferences and National Workshops.

Overall Number of Citations:	1201	Google Scholar: 07/09/2016
H-Index:	19	Google Scholar: 07/09/2016
i10-Index:	29	Google Scholar: 07/09/2016
H-Index (incl. self citations):	10	Scopus: 07/09/2016
H-Index (exlcuding self cit.):	8	Scopus: 07/09/2016

5.1 International Journals

1. P. Minervini, **C. d'Amato**, N. Fanizzi. Efficient energy-based embedding models for link prediction in knowledge graphs. Journal of Intelligent Information Systems Vol.47(1): 91-109. Springer. Berlin. DOI 10.1007/s10844-016-0414-7. ISSN: 0925-9902 (2016)

2. P. Minervini, **C. d'Amato**, N. Fanizzi, V. Tresp. Discovering Similarity and Dissimilarity Relations for Knowledge Propagation in Web Ontologies. Journal on Data Semantics Vol. Springer Berlin. ISSN: 1861-2032. doi:10.1007/s13740-016-0062-7 (2016)

3. [IJ000] C.M. Keet , A. Ławrynowicz , **C. d'Amato**, Alexandros Kalousis, Phong Nguyen, Raul Palma, Robert Stevens, Melanie Hilario. The Data Mining OPtimization Ontology. *Journal of Web Semantics. Vol. 32: 43-53.* Elsevier. *DOI:10.1016/j.websem.2015.01.001.* ISSN: 1570-8268 (2015)

4. [IJ00] N. Fanizzi, **C. d'Amato**, F. Esposito, P. Minervini. Numeric Prediction on OWL Knowledge Bases through Terminological Regression Trees. *Int. J. of Semantic Computing.* Vol. 6(4): 429-446. World Scientific Publishing Company. ISSN: 1793-351X (2012)

5. [IJ0] A. Rettinger, U. Lösch, V. Tresp, **C. d'Amato**, N. Fanizzi: Mining the Semantic Web - Statistical learning for next generation knowledge bases. *Journal of Data Mining and Knowledge Discovery.* 24(3): 613-662. ISSN: 1384-5810 (2012)

6. [IJ1] N. Fanizzi, **C. d'Amato**, F. Esposito. Induction of robust classifiers for web ontologies through kernel machines. *International Journal of Web Semantics.* Elsevier. Vol. 11:1-13. ISSN: 1570-8268 (2012)

7. [IJ2] **C. d'Amato**, N. Fanizzi, B. Fazzinga, G. Gottlob, and T. Lukasiewicz. Ontology-Based Semantic Search on the Web and its Combination with the Power of Inductive Reasoning. Annals of Mathematics and Artificial Intelligence (AMAI). Vol. 65(2-3). Springer. ISSN: 1012-2443 (print version), ISSN: 1573-7470 (electronic version). (2012)

8. [IJ3] **C. d'Amato**, S. Staab, N. Fanizzi, F. Esposito**.** DL-LINK: A Conceptual Clustering Algorithm for indexing description logics knowledge bases. *International Journal of Semantic Computing* Vol.4(4) ISSN: 1793-351X (2010)

9. [IJ4] **C. d'Amato**, N. Fanizzi, F. Esposito. Inductive Learning for the Semantic Web: What does it buy? *Semantic Web Journal.* Vol. 1(1) pp. 53-59. IOS-Press. ISSN: 1570-0844 (2010)

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5.4 Edited Works

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Claudia d'Amato agrees on permission of the Personal data Protection Code, Leg. Decr. n.196/2003

Bari, 09/09/2016

Sicerely,
Claudia d'Amato