

## ANTONIO LIETO Curriculum Vitae et Studiorum

Name and Surname: Antonio Lieto

Current work position: Post-doc research fellow at University of Torino, Department of Computer Science, Corso Svizzera 185 10149 Torino (Italy)

Home page: <http://www.di.unito.it/~lieto/>

Google Scholar Profile: <https://scholar.google.it/citations?user=7ZH-VQMAAAAJ&hl=it>

Email: [lieto@di.unito.it](mailto:lieto@di.unito.it), [lieto.antonio@gmail.com](mailto:lieto.antonio@gmail.com)

### Short Bio

I am currently a **post doc researcher** (since **May 2012**) at the Department of Computer Science, **University of Torino** and a **research associate** (since **February 2014**) at the **ICAR-C.N.R.** Institute in Palermo (Institute of High Performance Computing and Networking of the National Research Council). Since July 2016 I am also a **scientific collaborator** and **research associate** of the **Institute of Cyber Intelligence Systems** of the National Research Nuclear University MEPhI (Russia, reference: Prof. Alexei Samsonovich).

Before joining the Department of Computer Science at the University of Torino, I received a Ph.D. (dottorato di ricerca) in Communication Sciences at the **University of Salerno** (Ph.D. supervisor: Prof. Marcello Frixione) working in the area of **Logic** and **Knowledge Representation**. Previously I obtained, by the same University, both a Bachelor Degree (with a thesis in Logics) and a Master Degree (with a thesis in Computer Science) cum laude in Communication Sciences.

I have been **Visiting Researcher** at the **University of Haifa** (Israel, Dept. of Information Systems, June 2008, host Prof. Tsvi Kuflik), **Carnegie Mellon University** (USA, Dept. of Psychology and School of Computer Science, May-July 2016; host Prof. Christian Lebiere) and **Lund University** (Dept. of Cognitive Science, August-September 2016; host Prof. Peter Gärdenfors).

My main interests are at the intersection of Cognitive Sciences and Artificial Intelligence (AI) and my research is focused on the following - related - topics: **Knowledge Representation**, **Common Sense** and **Narrative Reasoning**, **Cognitive Architectures**, **Persuasive Technologies**. On these topics I have currently published more than **60 scientific papers** in top international peer-reviewed journals, books and conferences and I have co-edited 6 books. In 2013 I founded the series of international workshops on "**Artificial Intelligence and Cognition**" (AIC) and I have been general chair for the first four editions. Since 2015 I am a member of the **IEEE Technical Committee on Cognitive Robotics**: <http://www.ieee-coro.org>. Since November 2016 I am an elected member of the **Scientific Steering Committee** of the **Italian Society for Cognitive Science** (AISC), and I have been also appointed **Vice-President** of the Society (2017-2019).

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### Academic Roles and Work Positions

- **November 2016 – December 2019**: **Vice President** and Member of the Scientific Steering Committee of the **Italian Association of Cognitive Sciences**.
- **July 2016 – now**: **Scientific Research Consultant** at the **Institute of Cyber Intelligence Systems** at the National Research Nuclear University MEPhI, Moscow, Russia.
- **December 2015 - now**: **Member of the interdepartmental Center of Logic, Language and Cognition Center (LLC)**, University of Turin, Italy. Link: <http://www.llc.unito.it/>
- **February 2014 - now**: **Research Associate at ICAR-C.N.R. Institute in Palermo** (Institute of High Performance Computing and Networking of the Italian National Research Council).
- **May 2012 – now**: **Post doc research fellow** (assegnista di ricerca) at Dept. of Computer Science – University of Torino, Italy.
- **February 2012 - now**: **Member of the In.Di.Co.** a multidisciplinary research center that deals with law, economics, sociology and politics of the information society at the University of Salerno: <http://www.indico.unisa.it/index>
- **October 2011 – April 2012**: **Research fellow** (assegnista di ricerca) at the University of Salerno, Italy. Project: "Rappresentazione e Gestione della Conoscenza". Project leader: Prof. Marcello Frixione.

- **November 2008 - October 2011: Ph.D. student** at the Dept. of Communication Sciences, University of Salerno, Italy.
- **January 2009 - August 2009: Web Technology Consultant** at Estro-geni S.r.l. (Rome, Italy). I managed digital projects for the following companies: Wind Spa, BIM Distribuzione, Vodafone.
- **February 2006 – September 2008**, President of Feedback, university spin-off project of a company specialized in Semantic Search Engine Optimization through microformats and RDFa. The members were 7 master students at the Dept. of Communication Sciences of the University of Salerno, Italy.

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## Education and Research Periods Abroad

- **August-September 2016 (2 months):** Visiting Researcher at the Department of Cognitive Science, **University of Lund**, Sweden, (host: Prof. **Peter Gärdenfors**). Project: “Extending the KR frameworks of Cognitive Architectures with Conceptual Spaces: the Case of Analogical Reasoning”.
- **May-July 2016 (3 months):** Visiting Researcher at the Department of Psychology, **Carnegie Mellon University**, USA, (host: Prof. **Christian Lebiere**). Project: “Current Limitations and Future Developments of the Knowledge Level in Cognitive Architectures: towards an extension of the ACT-R declarative memory coupling Conceptual Spaces and Ontological Knowledge bases”.
- **June 2012:** Ph.D. (dottorato di ricerca) in “Communication Sciences” at the University of Salerno (evaluation grade expressed by the commission: “excellent”). Topic of the Ph.D.: Knowledge Representation and Reasoning. Title of the thesis “*Non Classical Concept Representation and Reasoning in Formal Ontologies*”. Supervisor: Prof. Marcello Frixione.
- **July 2008:** M.A. (laurea specialistica) in “Communication Sciences” (technological curriculum) obtained with the highest honors, University of Salerno. Thesis in Computer Science. Title of the thesis: “*Manually vs Semi-automatic domain specific ontology building*”. Supervisors: Prof. E. D’Avanzo, Prof. Tsvi Kuflik (University of Haifa, Israel). Main topics studied: Computer Science, Logic of Natural and Artificial Languages, Knowledge Management, Human-Computer Interaction, Cognitive Science.
- **June 2008 (1 month):** Visiting scholar at M.I.S. Department (Management of Information System Department) of the University of Haifa, Israel. (Supervisor: Prof. Tsvi Kuflik).
- **December 2005:** B.A. (laurea triennale) in “Communication Sciences”, University of Salerno (obtained with the highest honors). Thesis in Logics (Supervisor: Prof. Marcello Frixione, Co-Supervisor: Prof. Alessandro Laudanna). Main topics studied: Logic, Philosophy of Language, Philosophy of Science, Philosophy of Mind, Cognitive Psychology, Linguistics and Pragmatics, Logic II, Computer Science.

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## Doctoral Schools and International Courses

- 08-14 July 2012: SSSW 2012, 9th Summer School on Ontology Engineering and Semantic Web, Cercedilla (Madrid), Spain. <http://sssw.org/2012>.
- 01-12 August 2011: ESSLLI, 23th European Summer School on Logic, Language and Information (Ljubljana, Slovenia). <http://esslli2011.ijs.si/>.
- 2-10 February 2010 : Course on “Computational Ontologies” (within the doctoral school in Computer Science at the University of Bologna, Italy). 40h.
- 22-26 June 2009 and 5-19 February 2010: ISTC-CNR (Roma, Italy): course on “Multi-Agents Models for Simulation”.
- 30 August 2009 – 4 September 2009, Reasoning Web, Fifth International Summer School on Reasoning Web, Free University of Bozen-Bolzano, Italy. <http://reasoningweb.org/2009>.

## Research Interests

My research interests are at the intersection of **Cognitive Sciences** and **Artificial Intelligence (AI)**. On these topics I have currently published **more than 60 papers** in international books, journals (e.g. Connection Science, Cognitive Systems Research, Journal of Experimental and Theoretical Artificial Intelligence, Journal of Universal Computer Science, Semantic Web Journal, Biologically Inspired Cognitive Architectures Journal, Logic and Logical Philosophy etc.) and very competitive conferences (e.g. IJCAI, FLAIRS, AAI Fall Symposia, BICA, IEEE CISIS, ACM Web Science). Below I report the main topics of interest and, in square brackets, the main related publications.

Within the field of **cognitive science** I am mainly interested in the study of **non monotonic (heuristic) decision making processes** with a particular focus on **typicality** (or common-sense) **based reasoning**. In my applied research on **AI** and **Knowledge Representation** I used the insights coming from the cognitive science (in particular from the cognitive semantics, and from the philosophy of cognitive science) in order to **design, implement** and **evaluate** knowledge representation systems aimed at extending the representational and reasoning capacities of the standard logic-oriented symbolic frameworks (such as the **formal ontologies**). Such extensions, presented in my Ph.D. thesis [**th1**], have been introduced through the proposal of a **cognitively inspired** hybrid architecture for the representation of knowledge and for its processing starting from the natural language.

The theoretical [**j1, j4, bc5, c1-c2**], methodological [**j2, c3-c4**] and computational advantages [**j5, bc3**] of such approach w.r.t. the classical - logical-based - extensions of standard formalisms are discussed, with different focuses, in different journal and conference publications. Within this line of research, an application of the proposed architecture in the field of Question Answering has been implemented and evaluated in tasks of intelligent concept retrieval based on common sense linguistic descriptions [**j10, c13, bc6**]. A further extension of the proposed framework towards the area of **biologically inspired cognitive architectures** has been recently proposed [**c14, j14, c21, j15-j17**] and represents an active area of research interest. In particular, the framework has been recently adopted in **cognitive robotics** for the realization of a creative portraitist robot [**j12**].

In the last years, I have also approached the application of **semantic web technologies** and **ontological modelling** in the area of **cultural heritage, interactive storytelling, digital creativity, computational models of narrative** and **affective computing** [**j8, j9, j11, c6-c8, c11, c15-c18, m1-m2**].

Another area of interest is that one of **Human-Computer Interaction**. Here I am interested in the “non-logical” foundations of the forms of **interaction** occurring between human users and **persuasive technologies**. The starting hypothesis of this research is that, as for the classical rhetoric, some of the most common strategies adopted in **persuasive technologies** can be reduced to “*para-logical*” arguments based on **logical fallacies**. In particular, a **persuasion matrix** has been developed in order to unveil the direct correspondence between fallacious arguments (arguments that, even if not logically valid, are rational and cognitively persuasive) and some of the most common techniques used by the persuasive technologies. Such matrix has been used in preliminary analysis presented in [**c5, c10**] on e-commerce websites and on mobile technologies respectively. Additional experiments show an effective influence of fallacious-reducible techniques, adopted in web technologies, on human users [**j7**]. Finally, **Philosophy of science** themes of my interests concerns: induction, model prediction and the epistemological limitations and possibilities of the “computational explanation” [**c22, j13**]. In this area of research I am also interested to scientific debate concerning the development of “**transparent algorithmic procedures**” that should be adopted to build artificial systems able to provide explanations about their exhibited behaviour.

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## Research Projects

I am currently involved in the following research project:

- **Exception-OWL (May 2017-Now), Nonmonotonic Extensions of Description Logics and OWL for defeasible inheritance with exceptions**: Project financed by the University of Turin and Compagnia di San Paolo. This project aims at developing non monotonic extensions of ontological reasoning in order to reason about defeasible inheritance with exceptions. My work is focused on the problem of modelling the process of concept combination and blending according to a particular non

monotonic description logics that employs some insights coming from cognitive science and cognitive semantics.

I have been recently involved in the following research projects:

- **Co-Founded MIUR grant (may 2015- april 2017)**“Un approccio ibrido alla rappresentazione della conoscenza: prospettive e sistemi per l'integrazione di ontologie formali e spazi concettuali” (2015-2017) partially financed by the Italian Ministry of Education University and Research (MIUR) and by the Department of Computer Science of the University of Turin. This project aimed at investigating the adoption of a hybrid approach in Knowledge Representation and Reasoning through the integration of Conceptual Spaces and Ontologies for the creation of a large scale Knowledge base system integrable in Cognitive Architectures.
- **RVLIP “The role of visual imagery in lexical processing” (2013-2017)** (P.I. Prof. Diego Marconi), financed by the University of Turin and Compagnia di San Paolo. This is a joint project of three departments of the University of Turin: the Department of Philosophy, the Department of Neuroscience & Psychology, and the Department of Computer Science aimed at investigating the potential activation of the cortical areas involved in the generation of visual imagery during the phases of lexical processing. The activity of the unit of the Department of Computer Science is devoted to the design and the development of a computational model of visual load for lexical processing and to its evaluation w.r.t. the results of the psychological and neuroscience experiments (based on FMRI techniques) investigating such hypothesis in human subjects.
- **IT4Law 2014-2015:** (Project POR\_FESR founded by the European Commission through the Regione Piemonte). It concerns the use of formal ontological models of laws and norms in the area of intelligent information systems.
- **F.A.C.I.L.L.E 2014-2015 (C.N.R. project):** (ICT.P08.003.001). It regards the development of a framework for the management and intelligent fruition of knowledge and perceptual information in cognitive agents.
- **Invisibilia 2013-2014:** (Project POR\_FESR founded by the European Commission through the Regione Piemonte about the use of semantic technologies for modelling the processes of the development and management phases of modern arts). In particular I developed an enrichment of the **CIDOC-CRM** ontology by extending the modelling coverage of the creative processes to the area of the performing arts. Link: <http://www.invisibilia.unito.it/>
- **Labyrinth 2012-2013:** (Project POR\_FESR founded by the European Commission through the Regione Piemonte about the use of semantic technologies for the intelligent access to cultural archives). In this project I developed the **ArchetypeOntology** (an ontology of archetypal narrative elements connecting stories, characters, actions and roles) which is the underlying conceptual model on which the full system relies on in order to recommend a semantic and narrative based navigation to the users. The demo version of the Labyrinth system is publicly available at the link: <http://labyrinth.di.unito.it:8080/LabyrinthTest>.
- **FARB 2011** (Fondo Ateneo per Ricerca di Base – University Funds for Basic Research): Modelli ibridi per la rappresentazione computazionale dei concetti (Hybrid models for the computational representation of concepts).
- **FARB 2009:** Costanti cognitive nel linguaggio della poesia (Cognitive constants in the language of poetry).
- **PRIN 2007** (Progetto di Ricerca di Interesse Nazionale – Research Project of National Interest): Modelli epistemologici nella ricerca sui processi mentali e sull'organizzazione della conoscenza (Epistemological models on mental processes and knowledge representation).

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## SUMMARY OF PUBLICATIONS (full list below in the Publications section)

Books	6 (edited)
Journal publications	19 (journal papers under review are not included)
Refereed Conf. proceedings + Book chapters	37
Journal Special Issues (guest editor)	2
Miscellanea	2

### List of Peer Reviewed Publications

#### Guest Editor in International Journals Special Issues

[sp2] **Antonio Lieto** and Daniele P. Radicioni, Cognitive Systems Research, Vol. 39, 2016.

[sp1] **Antonio Lieto** and Marco Cruciani “Themed Section on Cognitive Artificial Systems” in Connection Science, 25(2), pp. 103-163, 2015.

#### Books (forthcoming in 2018)

[b] **Antonio Lieto** “**Cognitive Design for Artificial Minds**”, Routledge, Taylor and Francis. UK, to appear in 2018. (the contract with the editor has been already signed and the book is under preparation).

#### Books (edited)

[be6] **Antonio Lieto**, Mehul Bhatt Alessandro Oltramari and David Vernon (Eds.) to appear in "Proceedings of the Fourth International Workshop on Artificial Intelligence and Cognition (AIC 2016)", CEUR Workshop Proceedings, 2016.

[be5] Ben Miller, **Antonio Lieto**, Rémi Ronfard, Step. Ware, Mark Finlayson, "Proceedings of the 7th Workshop on Computational Models of Narrative", CMN 2016, Krakow, Poland. Open Access Series in Informatics [OASIS]: Schloss Dagstuhl – Leibniz-Zentrum für Informatik GmbH, Dagstuhl Publishing, 2016.

[be4] **Antonio Lieto**, Cristina Battaglini, Daniele P. Radicioni and Manuela Sanguinetti (Eds.) in "Proceedings of the Third International Workshop on Artificial Intelligence and Cognition (AIC 2015)", CEUR Workshop Proceedings, Vol. 1510, 2015.

[be3] Mark Finlayson, Ben Miller, **Antonio Lieto**, Rémi Ronfard, "Proceedings of the 6th Workshop on Computational Models of Narrative", CMN 2015, Atlanta, USA. Open Access Series in Informatics [OASIS] Vol. 45.: Schloss Dagstuhl – Leibniz-Zentrum für Informatik GmbH, Dagstuhl Publishing, 2015.

[be2] **Antonio Lieto**, Daniele P. Radicioni and Marco Cruciani "Proceedings of the Second International Workshop on Artificial Intelligence and Cognition (AIC 2014)", CEUR Workshop Proceedings, Vol. 1315, pp. 1-171, 2014.

[be1] **Antonio Lieto** and Marco Cruciani "Artificial Intelligence and Cognition. Proceedings of the First International Workshop AIC 2013", CEUR Workshop Proceedings, Vol. 1100, pp. 1-145. December, 2013.

## International Journals

[j19] **Antonio Lieto**, Christian Lebiere and Alessandro Oltramari, "The Knowledge Level in Cognitive Architectures: Current Limitations and Possible Developments" in *Cognitive Systems Research*, to appear, 2017. (Impact Factor 2017 1.2)

[j18] **Antonio Lieto**, Mehul Bhatt, Alessandro Oltramari and David Vernon, "The Role of Cognitive Architectures in General Artificial Intelligence" to appear in *Cognitive Systems Research*.

[j17] **Antonio Lieto**, Daniele Radicioni, Valentina Rho and Enrico Mensa "Towards a Unifying Framework for Conceptual Representation and Reasoning in Cognitive Systems" to appear in *Intelligenza Artificiale*, IOS Press.

[j16] **Antonio Lieto**, Antonio Chella and Marcello Frixione, "Conceptual Spaces for Cognitive Architectures: A *Lingua Franca* for Different Levels of Representation" in *Biologically Inspired Cognitive Architectures*, Vol.19, 1-9, Elsevier. (Impact Factor 2016 0.8)

[j15] **Antonio Lieto**, Daniele P. Radicioni, Valentina Rho, "Dual PECCS: A Cognitive System for Conceptual Representation and Categorization" in *JETAI, Journal of Theoretical and Experimental Artificial Intelligence*, 29(2), pp. 433-452, Taylor and Francis, UK (Impact Factor 2016 1.7).

[j14] Cristina Amoretti, Marcello Frixione and **Antonio Lieto**, The benefits of prototypes: The case of medical concepts, in *Reti Saperi e Linguaggi*, 2017.

[j13] **Antonio Lieto**, Daniele P. Radicioni, "From Human to Artificial Cognition and Back", *Cognitive Systems Research*, 39, pp 1-4, 2016. (Impact Factor 2016 1.2).

[j12] Agnese Augello, Ignazio Infantino, **Antonio Lieto**, Giovanni Pilato, Riccardo Rizzo and Filippo Vella "Artwork creation by a cognitive architecture integrating computational creativity and dual process approaches", in *Biologically Inspired Cognitive Architectures*, Volume 15, January 2016, Pages 74-86, Elsevier. (Impact Factor 2016 0.8)

[j11] Rossana Damiano, Vincenzo Lombardo, **Antonio Lieto** and Davide Borra "Exploring cultural heritage repositories with creative intelligence. The Labyrinth 3D system" in *Entertainment Computing* 2016, Elsevier.

[j10] **Antonio Lieto**, Andrea Minieri, Alberto Piana and Daniele P. Radicioni, "A Knowledge-Based System for Prototypical Reasoning", in *Connection Science*, 27 (2), pp 137-152, 2015 (Impact Factor 2015 1.1).

[j9] Vincenzo Lombardo, Cristina Battaglino, Antonio Pizzo, Rossana Damiano and **Antonio Lieto**, *Coupling conceptual modeling and rules for the annotation of dramatic media*, in *Semantic Web Journal*, IOS Press, Volume 6 (4), 2015. (Impact Factor 2015 1.7).

[j8] Rossana Damiano, Vincenzo Lombardo and **Antonio Lieto**, "Visual metaphors for semantic cultural heritage" In *EAI Endorsed Trans. Future Intellig. Educat. Env.* 1(4): e4 (2015).

[j7] **Antonio Lieto** and Fabiana Vernerio, *Influencing the others' minds: an experimental evaluation of the use and efficacy of fallacious-reducible arguments in web and mobile technologies*, in *PsychNology*, Vol.12 (3), pp. 87-105, 2014.

[j6] Marcello Frixione and **Antonio Lieto**, "Concepts, Perception and the Dual Process Theories of Mind" to appear in *Baltic Yearbook of Cognition, Logic and Communication* (eds. E. Machery, J. Prinz and J. Skilters), Vol 9, 2014.

[j5] Marcello Frixione and **Antonio Lieto**, "*Towards an Extended Model of Conceptual Representations in Formal Ontologies: A Typicality-Based Proposal*" in *Journal of Universal Computer Science* (Impact Factor 0.7), Vol. 20, Issue 3, pp. 257-276, 2014.

[j4] Marcello Frixione and **Antonio Lieto**, "*Formal Ontologies and Semantic Technologies: A Dual Process Proposal for Concept Representation*", in *Philosophia Scientiae*, 18(3), 2014, pp. 1-14.

[j3] **Antonio Lieto** "*Un approccio cognitivo alla rappresentazione dei concetti nelle ontologie formali*" in *Sistemi Intelligenti*, (2) 2013, pp. 211-228. Il Mulino, Bologna.

[j2] Marcello Frixione and **Antonio Lieto** "*Dealing with Concepts: from Cognitive Psychology to Knowledge Representation*" in *Frontiers in Psychology and Behavioral Science*, Vol. 2, Iss. 3, Jul. 2013, pp. 96-106.

[j1] Marcello Frixione and **Antonio Lieto** "*Representing Concepts in Formal Ontologies: Compositionality vs. Typicality Effects*", in *Logic and Logical Philosophy*, Volume 21 (2012), 391–414.

### **International Book Chapters and Lecture Notes**

[bc7] **Antonio Lieto**, Enrico Mensa and Daniele P. Radicioni "A Resource-Driven Approach for Anchoring Linguistic Resources to Conceptual Spaces" in *Lecture Notes on Artificial Intelligence*, Springer, Berlin, 2016.

[bc6] **Antonio Lieto**, Daniele P. Radicioni, Marcello Frixione and Valentina Rho, "*Extending Ontological Categorization through a Dual Process Conceptual Architecture*" in *Lecture Notes in Communications in Computer and Information Science*, Springer-Verlag, Berlin, 2015.

[bc5] Marcello Frixione and **Antonio Lieto**, "*Exemplars, Prototypes and Conceptual Spaces*", *Biologically Inspired Cognitive Architectures 2012, Advances in Intelligent Systems and Computing*, Volume 196, 131-136, Springer Berlin Heidelberg.

[bc4] Marcello Frixione and **Antonio Lieto**, "*Representing Non Classical Concept in Formal Ontologies: Prototypes and Exemplars*", In C. Lai, G. Semeraro, and E. Vargiu, editors, *New Challenges in Distributed Information Filtering and Retrieval*, *Studies in Computational Intelligence*. Volume 439. Springer, 2012.

[bc3] Marcello Frixione and **Antonio Lieto** "*Combining Description Logics and Typicality Effects in Formal Ontologies*". In: *AI\*IA 2011: Artificial Intelligence Around Man and Beyond - XIIth International Conference of the Italian Association for Artificial Intelligence*. Springer Verlag. *Lecture Notes in Artificial Intelligence*.

[bc2] Marcello Frixione and **Antonio Lieto** "*Formal Ontologies, Exemplars, Prototypes*". in "*Advances in Conceptual Modeling – New Challenges and Development*". Springer-Verlag. *Lecture Notes in Computer Science*.

[bc1] Ernesto D'Avanzo, Annibale Elia, **Antonio Lieto**, Tsvi Kuflik, Rossella Preziosi "*Where Does Text Mining Meets Knowledge Management? A Case Study*". In: *Interdisciplinary Aspect of Information Systems Studies*. D'Atri A., De Marco M., Casalino N. (eds), Heidelberg ; New York, N.Y.: Physica-Verlag, 2008, p. 310-317.

### **International Conferences, Lecture Notes and International Workshop Proceedings**

[c30] Antonio Chella, Marcello Frixione, **Antonio Lieto**, "Representational Issues in the Debate on the Standard Model of the Mind", to appear in *AAAI 2017 Fall Symposium on A Standard Model of the Mind*, November 2017, Arlington, Washington DC Area, AAAI Press..



- [c29] Agnese Augello, Ignazio Infantino, **Antonio Lieto**, Umberto Maniscalco, Giovanni Pilato, Filippo Vella, "Towards A Dual Process Approach to Computational Explanation in Human-Robot Social Interaction" in Proceedings of the IJCAI 2017 Workshop on "Cognition and Artificial Intelligence for Human-Centred Design, Melbourne, 19-25 August 2017.
- [c28] **Antonio Lieto** "Types and Levels of Knowledge (with Implications for Learning and Reasoning) in Proceedings of the IJCAI 2017 Cognitum Workshop, Melbourne, 19-25 August 2017.
- [c27] **Antonio Lieto**, "Representational Limits in Cognitive Architectures" in Post-Proceedings of EUCognition Conference, CEUR-Ws, 2017.
- [c26] Enrico Mensa, Daniele P. Radicioni, **Antonio Lieto**, "MeRaLi at Semeval-2017 task 2 subtask 1: a cognitively inspired approach. In Proceedings of the International Workshop on Semantic Evaluation (SemEval 2017). Vancouver, Canada, Association for Computational Linguistics, 2017.
- [c25] Enrico Mensa, Daniele P. Radicioni, **Antonio Lieto**, "TTCSE: A Vectorial Resource for Computing Conceptual Similarity" in Proceedings of SENSE 2017, 1st Int. Workshop on Sense, Concept and Entity Representations and their Applications, at EACL 2017 (European Chapter of the Association of Computational Linguistics), Valencia, ACL anthology: <http://www.aclweb.org/anthology/W17-1912>
- [c24] **Antonio Lieto**, Enrico Mensa and Daniele P. Radicioni "Taming Sense Sparsity" in Proceedings of CLIC 2016, Third Italian Conference on Computational Linguistics, Naples, Italy. 2016.
- [c23] Cristina Amoretti, Marcello Frixione, **Antonio Lieto** and Greta Adamo "Ontologies, Disorders and Prototypes" to appear in Proceedings of IACAP 2016, 6th Annual Meeting of the International Association for Computing and Philosophy, 14-17 June 2016, Ferrara, Italy.
- [c22] **Antonio Lieto** "Some Epistemological Problems with the Knowledge Level in Cognitive Architectures" to appear in Proceedings of the 12th Annual Conference of the Italian Association for Cognitive Science, December 10-12, Genoa.
- [c21] **Antonio Lieto**, Daniele P. Radicioni, Valentina Rho, "*A Common-Sense Conceptual Categorization System Integrating Heterogeneous Proxytypes and the Dual Process of Reasoning*". In *Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI)*, Buenos Aires, Argentina, AAAI Press. July 2015, pp 875-881.
- [c20] **Antonio Lieto**, Daniele P. Radicioni, Valentina Rho, "*Integrating a Cognitive Framework for Knowledge Representation and Categorization in Diverse Cognitive Architectures*" in *Procedia Computer Science, Proceedings of BICA 2015, 6th International Conference of Biologically Inspired Cognitive Architectures*, Lyon, France, 6-8 November 2015, Elsevier.
- [c19] Daniele P. Radicioni, Francesca Garbarini, Fabrizio Calzavarini, Monica Biggio, **Antonio Lieto**, Katiusia Sacco and Diego Marconi, "On Mental Imagery in Lexical Processing: Computational Modeling of the Visual Load Associated to Concepts". In Proceedings of the EuroAsianPacific Joint Conference on Cognitive Science (EAP-COGSCI 2015), pp 181-186.
- [c18] Rossana Damiano, Vincenzo Lombardo and **Antonio Lieto** and Davide Borra, "Mind the red thread! 3D metaphors for cultural heritage visualization" In Proceedings of Digital Heritage 2015, Granada, Spain.
- [c17] Vincenzo Lombardo, Rossana Damiano and **Antonio Lieto**, "Knowledge-based framework for the communication of Public Art" In Proceedings of IMIS 2015, 9th International Conference on Innovative Mobile and Internet Services in Ubiquitous Computing, Blumenau, Brazil.



- [c16] Viviana Patti, Federico Bertola and **Antonio Lieto**, “*Arsemotica for arsmeteo.org: Emotion-driven Exploration of Online Art Collections*” to appear in 28th International FLAIRS (FLorida Artificial Intelligence Research Society) Conference, May 18 - 20, 2015, Hollywood, Florida, USA, AAAI press.
- [c15] Rossana Damiano, Vincenzo Lombardo and **Antonio Lieto**, “*Visual metaphors for semantic cultural heritage*” In Proceedings of Intetain 2015, 7th International Conference on Intelligent Technologies for Interactive Entertainment, Torino.
- [c14] **Antonio Lieto**, “*A Computational Framework for Concept Representation in Cognitive Systems and Architectures: Concepts as Heterogeneous Proxytypes*” in *Procedia Computer Science*, Vol. 41, 2014, pp. 6-14, Proceedings of BICA 2014, 5th International Conference of Biologically Inspired Cognitive Architectures, Boston, MIT, USA, 7-9 November 2014, Elsevier.
- [c13] **Antonio Lieto**, Andrea Minieri, Alberto Piana, Daniele P. Radicioni and Marcello Frixione, “*A Dual Process Architecture for Ontology-Based Systems*”, in Proceedings of 6th International Conference on Knowledge Engineering and Ontology Development, KEOD 2014, Rome, Italy. [**Shortlisted for the Best Paper Award**].
- [c12] **Antonio Lieto** and Rossana Damiano, “*A Hybrid Representational Proposal for Narrative Concepts: A Case Study on Character Roles*”, Proceedings of the 5<sup>th</sup> workshop on Computational Models of Narratives, CMN’14, Oasics Dagstuhl Series. Quebec City, Canada.
- [c11] Rossana Damiano, **Antonio Lieto** and Vincenzo Lombardo, “*Ontology-based visualisation of cultural heritage metadata*”, in in IEEE Proceedings of CISIS 2014, 8th International Conference on Complex, Intelligent, and Software Intensive Systems. July 2-4, 2014. Birmingham, UK.
- [c10] **Antonio Lieto** and Fabiana Vernerio “*Persuasion in mobile apps and logical fallacies: a preliminary study*”, in Adjunct Proceedings of the 9<sup>th</sup> International Conference on Persuasive Technologies, PERSUASIVE 2014, Padua, Italy, 21-23 May 2014.
- [c9] Leo Ghignone, **Antonio Lieto** and Daniele P. Radicioni, "Typicality-Based Inference by Plugging Conceptual Spaces Into Ontologies" in A. Lieto and M. Cruciani (editors), Proceedings of AIC'13 Workshop, Torino, 3rd December 2013. CEUR Workshop Proceedings.
- [c8] **Antonio Lieto** and Rossana Damiano, "Building narrative connections among media objects in cultural heritage repositories" in Proceedings of ICIDS'13, Istanbul 6-9 November, 2013. Lecture Notes in Computer Science. Springer.
- [c7] Rossana Damiano, **Antonio Lieto**, "Ontological representation of narratives: a case study on stories and actions" Forthcoming in Proceedings of CMN13 (Computational Models of Narratives), satellite workshop of the 35th Meeting of the Cognitive Science Society CogSci 2013. Hamburg 4-6 August, 2013. Hamburg, Germany.
- [c6] Vincenzo Lombardo, Rossana Damiano, **Antonio Lieto**, Antonio Pizzo, "Visualization of character's intentions in dramatic media" in IEEE Proceedings of CISIS 2013, 7th International Conference on Complex, Intelligent, and Software Intensive Systems. July 3-5, 2013. Taichung, Taiwan.
- [c5] **Antonio Lieto** and Fabiana Vernerio, “*Unveiling the link between logical fallacies and web persuasion*” in Proceedings of ACM WebScience 2013, 2-4 May 2013, Paris. France.
- [c4] Marcello Frixione and **Antonio Lieto**, “*Prototypes vs Exemplars in Concept Representation*”, in Proceedings of KEOD 2012, International Conference on Knowledge Engineering and Ontology Development, 4-7 October 2012, Barcelona. Spain.
- [c3] Marcello Frixione and **Antonio Lieto** “*Representing and Reasoning on Typicality in Formal Ontologies*”, in I-SEMANTICS 2011, 7th International Conference on Semantic Systems, Sept. 7-9, 2011, Graz, Austria. ACM International Conference Proceedings Series.

[c2] Marcello Frixione and **Antonio Lieto** "*Representing Concepts in Artificial Systems: A Clash of Requirements*", In Proceedings of HCP 2011, International Workshop on Human Centered Processes, 9-11 February 2011, Genoa, Italy.

[c1] Marcello Frixione and **Antonio Lieto** "*The Computational Representation of Concepts in Formal Ontologies: some general considerations*", In: Proceedings of KEOD 2010, International Conference on Knowledge Engineering and Ontology Development, 25-28 October 2010, Valencia. Spain.

### National Conferences

[nc1] Cristina Amoretti, Marcello Frixione and **Antonio Lieto**, "Representing mental disorders through a hybrid semantics", in Proceedings of SIFA 2016, XII Conference of the Italian Society for Analytic Philosophy, Pistoia, 5-7 September 2016.

### Miscellanea

[m2] **Antonio Lieto**, Computational Models (of Narrative) for Literary Studies" in Semicerchio, Rivista di Poesia Comparata, Pasini Editore. (2015).

[m1] **Antonio Lieto**, Rossana Damiano e Vanessa Michielon, «Conceptual Models for Intangible Art», Mimesis Journal, 3, (2), 2014, 70-78.

### Ph.D. Thesis

[th1] **Antonio Lieto** "*Non Classical Concept Representation and Reasoning in Formal Ontologies*", Ph.D. Thesis, University of Salerno, Italy, 2012.

### Organizational activities

I founded the international workshop series **AIC** on "**Artificial Intelligence and Cognition**". I have been the **general chair** for the first 4 editions (<http://www.di.unito.it/~lieto/AIC2013/>; <http://aic2014.di.unito.it/>; <http://www.di.unito.it/~lieto/AIC2015/>, and <http://www.di.unito.it/~lieto/AIC2016/>). From the 2017 I am the general chair of the event which is locally organised by international scholars around the world.

I have co-organized (with Mehul Bhatt, University of Bremen) one of the official IJCAI 2017 workshops on "**Cognition and Artificial Intelligence for Human-Centred Design**" that has been accepted as an and that will be held in Melbourne (Australia, August 2017). <http://ijcai-17.org/workshop-program.html>

I have **co-organized** (with Mark Finlayson, Ben Miller and Remi Ronfard) of the 6<sup>th</sup> International Workshop on **Computational Models of Narrative** (CMN'15) co-located with the 2<sup>nd</sup> Conference on Advances in Cognitive Systems (held in Atlanta, USA, May 2015). Link: <http://narrative.csail.mit.edu/cm15/>

I have **co-organized** (with the Prof. Leonardo Lesmo) the round table on "**Ontologies and Common Sense Modelling**" within the national conference of the AISC (Italian Association for Cognitive Sciences) at the University of Trento (participants: Nicola Guarino, Luciano Serafini, Marcello Frixione, Enrico Franconi, Leonardo Lesmo, Rosaria Conte, Pietro Perconti).

I was member of the organizing committee of the workshop "**Structuring the Knowledge on the Web**" at the Department of Communication Sciences, University of Salerno. Period: 13-14 January 2011. Webpage: <http://sites.google.com/site/ontologyreasoningunisa>

I was member of the organizing committee of the cycle of seminars "**Lectures on User Modeling**" given by the Prof. Tsvi Kuflik (University of Haifa, Israel) at the Dept. of Communication Sciences, University of Salerno. Period: 21st-24th April 2008.

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## Partecipation to Editorial Boards, Program Comittees and Reviewer Activity

Since **September 2017** I am **Associate Editor** and Member of the **Editorial Board** of the **Cognitive Systems Research journal** (Elsevier): <https://www.journals.elsevier.com/cognitive-systems-research/editorial-board> I am Since November 2016 I am **Associate Editor** and Member of the **Editorial Board** of the **BICA journal** (Elsevier): <http://www.journals.elsevier.com/biologically-inspired-cognitive-architectures/editorial-board>.

Since **July 2016** I perform reviewing activity for the **MIT Press** (sections: cognitive science, artificial models of cognition).

I have been reviewer for more than 30 papers for the following **international journals**: **Knowledge-Based Systems** (Elsevier, Amsterdam, Impact Factor: 2.97), **IEEE Transactions on Neural Networks and Learning Systems** (Impact Factor: 4.8), **IEEE Transactions on Cognitive and Developmental Systems**, **Applied Ontology** (IOS Press, Amsterdam, Impact Factor: 1.2), **Robotics and Autonomous Systems** (Elsevier, IF 1.25), **Foundations of Science** (Springer, Berlin; Impact Factor 0.8), **Connection Science** (Taylor and Francis, London, Impact Factor 1.5), **Cognitive Systems Research** (Elsevier, Amsterdam, Impact Factor 1.2), **Künstliche Intelligenz** (Springer), **BICA Journal** (Biologically Inspired Cognitive Architecture, Elsevier, Amsterdam, 0.8), **Sistemi Intelligenti** (Il Mulino, Bologna), **Review of Philosophy and Psychology** (Springer), **Rivista Italiana di Filosofia Analitica**, **Baltic Yearbook of Cognition, Logic, and Communication**.

I am currently member of the **scientific comittee** of the following **international conferences/workshops**:

- **AISC 2017 Conference** (14th Conference of the Italian Association of Cognitive Sciences), December 2017, University of Bologna, Italy.
- **AI\*IA 2017**, XVI International Conference of the Italian Association for Artificial Intelligence), Bari, Nov. 2017, Italy.
- **SEMAPRO 2017** Conference (11th International Conference on Advances in Semantic Processing, Barcelona, Spain, 12-16 Nov. 2017.
- **KMIS 2017**, IX International Conference on Knowledge Management and Information Sharing, 1-3 November 2017, Funchal, Madeira, Portugal.
- **BICA 2017**, 8th International Conference on Biologically Inspired Cognitive Architectures, Moscow, Russia, 1-6 August 2017
- **CeX Workshop** – 1st International Workshop on “Comprehensibility and Explanation in Artificial Intelligence and Machine Learning”, @ AI\*IA, Bari, Nov. 2017, Italy. <https://cex.inf.unibz.it/>
- **GenSW2017**, 1st International Workshop on "Generalizing knowledge: from Machine Learning and Knowledge Representation to the Semantic Web" @ AI\*IA, Bari, Nov. 2017, Italy. <https://sites.google.com/site/gensw2017/home>
- **IEA/AIE 2017** 30th International Conference on Industrial, Engineering & Other Applications of Applied Intelligent Systems. Special track in Cognitive Vision: <http://hcc.uni-bremen.de/cognitive-vision/track2017/>, Arras, France.
- **ProSocrates 2017**, 2nd Problem-solving, Creativity and Spatial Reasoning Symposium, Hanse-Wissenschaftskolleg (HWK) Institute for Advanced Study Delmenhorst, Germany. <http://creacogcomp.com/prosocrates2017.html>
- **ICSE 2017**, International Conference on Soft Computing in Engineering, Jaipur, India.

I have been member of the **scientific committee** of the following **international conferences**:

- **AISC 2016 Conference** (13th Conference of the Italian Association of Cognitive Science), November, 2016, Turin, Italy.
- **SEMAPRO 2016** Conference (10th International Conference on Advances in Semantic Processing, Venice, Italy, 9-13 Oct. 2016).
- **Spatial Cognition 2016**, 9<sup>th</sup> Biannual International Conference on Spatial Cognition, Philadelphia, USA, 2-5 August, 2016.
- **BICA 2016**, 7<sup>th</sup> International Conference on Biologically Inspired Cognitive Architectures, New York, USA, 16-19 July, 2016.
- **Contact 2016 @ FOIS**, 2nd International Workshop on Computer vision + ONTology: AppliedCross-disciplinary Technologies, Annecy, France, July 6-9, 2016.
- **BICA 2015**, 6<sup>th</sup> International Conference on Biologically Inspired Cognitive Architectures, Lyon, France 6-8 November 2015.
- **SEMAPRO 2015** Conference (9th International Conference on Advances in Semantic Processing, Nice, France, 19-24 July 2015).
- **AISC 2015 Conference** (12th Conference of the Italian Association of Cognitive Science), December 2015, Genoa, Italy
- **BICA 2014**, 5<sup>th</sup> International Conference on Biologically Inspired Cognitive Architectures, MIT - Massachusetts Institute of Technology, Boston, USA, 7-9 November 2014.
- **Spatial Cognition 2014** Conference, Sixth International Conference on Spatial Cognition, Bremen, Germany, 15-19 September 2014.
- **SEMAPRO 2014** Conference (Eight International Conference on Advances in Semantic Processing, Rome, Italy, 24-28 August 2014).
- **AISC 2014** (11st Conference of the Italian Association of Cognitive Sciences), Rome, Italy, 2-5 December 2014.
- **AIoT14**, (International Workshop on Affordances in the Internet Of Things @ COIOTE 14), Rome, Italy.
- **AISC 2013** (10<sup>th</sup> Conference of the Italian Association of Cognitive Sciences), Napoli, Italy, 20-22 Sept. 2013.
- **SEMAPRO 2013** Conference (Seventh International Conference on Advances in Semantic Processing, Porto, Portugal), 29 Sept. – 3 Oct. 2013.

I have been reviewer for the following international conferences:

- **LREC 2016** (X International Conference on Language Resources and Evaluation, 23-28 May, Portoroz, Slovenia).
- **AI\*IA 2015** (XV International Conference of the Italian Association for Artificial Intelligence), Reggio Emilia, Italy.
- **Semantics 2015** (XI International Conference on Semantic Systems) Vienna, Austria.
- **AI\*IA 2013** (XIII International Conference of the Italian Association for Artificial Intelligence), Torino, Italy.
- **SMAP 2012** (7th Semantic and Social Media Adaptation and Personalization, SMAP, workshop, Luxembourg).

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## Talks and Invited Lectures

(in this list are **not** reported the talks given at conferences or workshops with published proceedings).

**Invited talk at IJCAI 2017 Cognitum Workshop:** (invitee Dr. Erik T. Mueller, now at Capital One, ex-IBM Watson Team, USA) "Types and Levels of Knowledge (with Implications for Learning and Reasoning)", Melbourne, Australia, August 20, 2017. <http://cognitum.ws/2017/07/01/cognitum-2017-programproceedings/>

**Invited Panel Participation at IJCAI 2017 Cognitum Workshop:** (invitee Dr. Erik T. Mueller "Panel discussion – Can Deep Learning Scale up to High-Level Cognition? ", Melbourne, Australia, August 20, 2017. Panelists: Anthony G. Cohn (University of Leeds), Mary-Anne Williams (University of Technology Sydney), Antonio Lieto (Università di Torino). <http://cognitum.ws/2017/07/01/cognitum-2017-programproceedings/>

**Invited Panelist** at the “Co-Design” Roundtable, June 6-9 2017, University of Bremen, Bremen, Germany. <http://hcc.uni-bremen.de/codesign2017/roundtable/>

**Invited Lecture** at the Summer School on International Early Research Career Enhancement on Biologically Inspired Cognitive Architectures, (invitee: Prof. Alexei Samsonovich, George Mason University, USA and NRNU MEPhI, Department of Cybernetics, Russia). Title of the talk: "Knowledge Representation in Cognitive Architectures: Current Limitations and Open Challenges", Moscow, Russia, August 2, 2017.

**Invited Panelist** at the “Co-Design” Roundtable on “Artificial Intelligence and Chatbots”, June 6-9 2017, University of Bremen, Bremen, Germany. <http://hcc.uni-bremen.de/codesign2017/roundtable/>

**Invited Panelist** at the Roundtable on “Artificial Intelligence and Chatbots”, May 29 2017, Center of Logic Language and Cognition of the University of Torino, Campus Luigi Einaudi, Torino, Italy. <https://www.llc.unito.it/eventi/tavola-rotonda-su-intelligenza-artificiale-e-chatbot>

“Levels of representation in cognitive architectures: The role of conceptual spaces”, Seminar at the Center of Logic Language and Cognition of the University of Torino, Torino, Italy, January 12 2017. <http://www.llc.unito.it/eventi/seminar-antonio-lieto>

The “Knowledge Limits” in Cognitive Architectures, EuCognition 2016 Meeting, December 8-9, Vienna, Austria.

**Invited talk** (invitee Prof. Alessandro Saffiotti, Örebro University, Sweden): "Penguins and Polar Bears: A Hybrid Representational and Reasoning Approach for Common Sense Categorization" at the School of Science and Technology, University of Örebro, Sweden, September 13 2016. <https://www.oru.se/institutioner/naturvetenskap-och-teknik/forskning/seminarietkalender/aass/2016-09-13/>

**Invited talk** (invitee Prof. Peter Gärdenfors, Lund University, Sweden): "Dual PECCS: A Cognitive System for Conceptual Categorization and Reasoning" at the Cognitive Science Series Seminar, Lund University, Sweden, August 31 2016. <https://goo.gl/Ns7Qkx>

"Extending the Knowledge Level in Cognitive Architectures with Conceptual Spaces”, Conceptual Spaces at Work 2016 Workshop, Stockholm, Sweden, August 24-27 2016. The video of the talk is available at this link: <https://sh-meditetnik.solidtango.com/video/mb416ht15-25-aug-13-58>

**Invited lecture** (invitee Prof. Alexei Samsonovich, George Mason University, USA) on the topic “**Computational Explanation in BICA**” - at the Winter BICA School (<http://school.bicasociety.org>) that will be held in Moscow (Russia) from April 21-24 2016. The school has been organised and sponsored by the Russian

Science Foundation (RSF) and by the BICA Society. The video of the talk is available on the [Channel of the BICA Society](#) and can be watched here <https://vimeo.com/172359159>

**Invited talk** (invitee Prof. Antonis Kakas, University of Cyprus): "***Towards which Intelligence? Cognition as Design Key for building Artificial Intelligent Systems***", at *ESCOPE 2015 19<sup>th</sup> Conference of the European Society for Cognitive Psychology*. Official Symposium on "Bridging Cognitive Psychology and Artificial Intelligence", Paphos, Cyprus, September 17-20 2015. Other invited speakers of this symposium: Prof. Peter Gärdenfors, Prof. Pat Langley. Link: <http://www.escop2015.org/list-of-accepted-symposia/>

**Invited talk** (invitee Prof. Francesco Stella, University of Siena): "***Steps Towards Cognitive Narrative Machines***", Symposium: The Mechanic Muse, organized by the University of Siena, 12-13 June 2015, Siena (Certosa di Pontignano). Link: <http://goo.gl/9V9epk>

"*A Common-Sense Conceptual Categorization System Integrating Heterogeneous Proxotypes and the Dual Process of Reasoning*", Seminar at the Logic Language and Cognition Group of the University of Torino, Circolo dei Lettori, Torino, Italy, May 22 2015. With D.P. Radicioni.

"*Categorizzazione basata su Prototipi ed Esempari mediante l'integrazione di Spazi Concettuali e Ontologie in una Architettura Cognitiva*", Senso Comune Workshop 2015, ISTC-CNR, Rome, Italy, 31 March 2015.

"*Ontological Representations and Narrative: A Case Study in Cultural Heritage*", SIG IAOA Design Semantics Workshop 2014, University of Bari, Department of Computer Science, Italy, 29th Jun 2014 - 2nd July 2014.

**Invited talk** (invitee: Ph.D. Silvano Zipoli Caiani, University of Milan, Department of Philosophy): "***Concepts: on the need of an integrated perspective in AI***", Neurophilosophy Seminar, University of Milan, Italy, 17th April 2014. Link: <http://neurophilosophy.unimi.it/index.php/lunctime-archive/icalrepeat.detail/2014/04/17/163/32/antonio-lieto>

"*Attacking the Typicality Problem by Coupling Conceptual Spaces and Ontologies*", Senso Comune Workshop 2014, ISTC-CNR, Trento, Italy, 25th March 2014.

**Invited talk** (invitee: Prof. Christian Freksa, University of Bremen, Cognitive Systems Group): "***A cognitive approach for modeling and reasoning on common sense knowledge in computational ontologies***", Spatial Cognition Colloquium Workshop, University of Bremen, Germany, 7 March 2014. Link: [http://www.sfbtr8.spatial-cognition.de/en/news-single-view/?tx\\_ttnews\[tt\\_news\]=1178&cHash=bc49265b7ded2082bc8369c2356e5a18](http://www.sfbtr8.spatial-cognition.de/en/news-single-view/?tx_ttnews[tt_news]=1178&cHash=bc49265b7ded2082bc8369c2356e5a18)

"*Concepts, Perception and the Dual Process Theory of Mind*" at 9th International Symposium of Cognition, Logic and Communication: Perception and Concepts, Riga, Latvia, 17 May 2013. With M.Frixione.

**Invited talk:** "***Concepts, (Formal) Ontologies and Conceptual Change***" at ConChaMo4 workshop, Helsinki, Finland, 22nd February 2013. Link: <http://conceptualchange.it.helsinki.fi/workshops/conchamo4/abstracts/index.html#lieto>. Other invited speakers of the workshop were: Prof. David Danks, Prof. Andy Di Sessa, Prof. Peter Gärdenfors, Prof. Paul Thagard, Prof. Timo Honkela. A brief synthesis of all the talks is available on the blog "Cognitive Systems": <http://cogsys.blogspot.fi/2013/02/the-fourth-workshop-on-modeling.html>.

"*Non Classical Concept Representation in Formal Ontologies*", Dipartimento di Informatica, Università di Torino, 19 Sept. 2012.

"*Connecting Prototypical and Definitional Knowledge in the Semantic Web*", poster presentation at SSSW12, 9th Int. Summer School on Semantic Web and Knowledge Engineering, Cercedilla (Madrid), Spain. 08-14 July 2012.

"*Formal Ontologies and Semantic Technologies: A Dual Process Proposal for Concept Representation*", CLMPS 11, 14th Congress of Logic Methodology and Philosophy of Science, University of Nancy, France. July 19-26 2011. With M. Frixione.

"*Concept Representation in Formal Ontologies: A Dual Process Proposal*", LRR10, Conference on Logic Reasoning and Rationality, University of Ghent, Belgium. September 2010. With M. Frixione.

"Manual vs Semi-Automatic Approach to the Ontology Building", Reasoning Web 2009, University of Bolzano, Brixen-Bressanone, Italy. 30 aug - 4 sept. 2009.

"Intelligent Search e Motori di Ricerca Inferenziali", Facoltà di Economia Roma Tre. Roma 21-22 nov. 2008.

"A Web Based Ontology for Energy Domain", MIS Department, Haifa University, Israel. 18 june 2008.

## Partecipation to Conferences as Speaker

- LRR10 (Int. Conf. on Logic, Reasoning and Rationality), Ghent, Belgium.
  - KEOD 2010 (Int. Conf. on Knowledge Engineering and Ontology Development) Valencia, Spain
  - AISC 2010 and 2015 (Italian Conference of the Cognitive Science Association), Trento/Genoa, Italy.
  - AI\*IA 2011 (Int. Conference of the Italia Association for Artificial Intelligence), Palermo, Italy
  - I-Semantics 2011 (Int. Conference on Semantic Systems), Graz, Austria.
  - CLMPS 2011 (Congress of Logic, Methodology and Philosophy of Sciences), Nancy, France.
  - HCP 2011, (Int. Conf. on Human Centered Processes) Genoa, Italy.
  - KEOD 2012, (Int. Conf. on Knowledge Engineering and Ontology Development), Barcelona, Spain
  - BICA 2012 (Int. Conf. on Biologically Inspired Cognitive Architectures), Palermo, Italy.
  - ConChamo3 workshop (Int. workshop on Ontologies and Conceptual Change), Helsinki, Finland.
  - **ConChamo4 workshop** (Int. workshop on Computational Models and Conceptual Change), Espoo, Finland (**invited talk**).
  - **Spatial Colloquium Workshop**, University of Bremen, Dept. of Informatics, Cognitive Systems Group, Germany (**invited talk**)
  - **Neuro-philosophy Workshop Series**, University of Milano, Dept. of Philosophy, Italy (**invited talk**)
  - ACM WebSci 2013, (5<sup>th</sup> International Conference on Web Science), Paris, France.
  - CMN'13, (Int. work. on Computational Models of Narratives at CogSci'13), Hamburg, Germany.
  - ICIDS'13 (Int. Conf. on Interactive Digital Storytelling), Istanbul, Turkey.
  - KEOD 2014, (Int. Conf. on Knowledge Engineering and Ontology Development), Rome, Italy. Session chair of the "Ontologies for Cognitive Systems" session).
  - AAI'14 (28<sup>th</sup> Conference on Association for the Advancement of Artificial Intelligence), Quebec City, Canada. I participated as speaker at CMN'14, (Int. work. on Computational Models of Narratives and a AAI'14 workshop).
  - BICA'14 (5<sup>th</sup> International Conference on Biologically Inspired Cognitive Architectures), Boston, MIT Campus, USA.
  - IJCAI 2015 (24<sup>th</sup> International Joint Conference on Artificial Intelligence), Buenos Aires, Argentina.
  - **ESCOP 2015** (19<sup>th</sup> Conference of the European Society for Cognitive Psychology), Paphos, Cyprus. (**invited talk**)
  - BICA'15 (6<sup>th</sup> International Conference on Biologically Inspired Cognitive Architectures), Lyon, France (session chair of the Knowledge Representation and Reasoning session).
  - **Fierces on BICA**, First International Winter School on BICA, Moscow, Russia (**invited lecture**)
  - **IJCAI 2016** (New York, USA): **session chair**. I have been invited to chair one of the sessions on Knowledge Representation, Reasoning and Logic.
  - EUCognition Meeting 2016 (Vienna, Austria), Meeting on Cognitive Architectures of the EuCognition group.
  - **Invited Panelist** at the "Co-Design" Roundtable, June 6-9 2017, University of Bremen, Bremen, Germany. <http://hcc.uni-bremen.de/codesign2017/roundtable/>
  - **Invited Panelist** at the IJCAI 2017 Cognitum Workshop <http://cognitum.ws/2017/07/01/cognitum-2017-programproceedings/>, August 20, Melbourne, Australia.
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## Teaching Activity and Seminars

My overall teaching activity includes more than **200 hours** of frontal lessons and seminars provided in Ph.D. Programs and at graduate and undergraduate university courses.

**Academic year 2017/2018** (University of Torino and University of Genoa):

- **Professore a Contratto** (equivalent of Adjunct Professor) for the undergraduate course of “**Web technologies**” at the SAA School of Business Administration, University of Turin. For this position I have 42 **hours** of frontal lessons with a class of 60 students where I teach the basics of human-computer interaction and web languages (mark-up: html, xml; scripting: javascript, php).

**Academic year 2016/2017** (University of Torino and University of Genoa):

- **Professore a Contratto** (equivalent of Adjunct Professor) for the undergraduate course of “**Computer Science for Humanities**” at the Humanities Department, University of Genoa, For this position I had 54 **hours** of frontal lessons with a class of 80 students where I teach an introductory course of computer science.
- **Professore a Contratto** (equivalent of Adjunct Professor) for the undergraduate course of “**Web technologies**” at the SAA School of Business Administration, University of Turin. For this position I had 42 **hours** of frontal lessons with a class of 60 students where I teach the basics of human-computer interaction and web languages (mark-up: html, xml; scripting: javascript, php).

**Academic year 2015/2016** (University of Torino):

- April 2016: Invited seminars (**6 hours**) by Prof. Marcello Frixione (University of Genoa), for the course of Logic and Philosophy of Cognitive Science. Topic: **Conceptual Spaces and Analogical Reasoning**.
- Teaching Assistant for the undergraduate course of “**Web technologies**” at the SAA School of Business Administration, University of Turin, (**Prof. Diego Magro**). For this position I had 40 **hours** of frontal lessons with a class of 60 students where I teach the basics of human-computer interaction and web languages (html, xml, javascript, php).

**Academic year 2014/2015** (University of Torino):

- **2h** Seminar on "Ontologies and Rule Systems" in the course of Cognitive Systems at the Università di Torino (held by **Prof. Guido Boella**, **Prof. Alessandro Mazzei** and **Prof. Daniele P. Radicioni**), University of Torino, Department of Computer Science.
- **2h** Seminar on “Ontology Reasoning” in the course "Artificial Intelligence" (held by **Prof. Vincenzo Lombardo** and **Prof. Rossana Damiano**), University of Torino, Department of Psychology.

**Academic year 2012/2013** (University of Torino):

- Course of **20h** on "Ontologies and Knowledge Representation" at the IIRAF (Istituto Internazionale per la Ricerca e l'Alta Formazione, Vietri sul Mare).
- **2h** Seminar on "Concepts and Ontological Models" in the course of “Artificial Intelligence” (held by **Prof. Leonardo Lesmo** and **Prof. Rossana Damiano**), University of Torino, Department of Psychology.
- **2h** Seminar on “Ontology Reasoning” in the course "Semantic Web", (held by the **Prof. Federica Cena**), University of Torino, Department of Humanities.

**Academic years from 2008/2009 to 2011/2012** (University of Salerno):

I gave **10h** of seminars and **10h** of laboratory activities in the courses of “**Logics**” and “**Logics of Natural and Artificial Languages**” held by the **Prof. Marcello Frixione** on the following topics: Logic (Propositional Logic and First Order Logic), Knowledge Representation, Description Logics, Non-monotonic extensions of Description Logics, Ontology Engineering, Semantic Web Languages.

During the academic year **2010/2011** I also gave a series of lectures of **12 hours** entitled “Web Languages and Technologies for Online Payments” at the Department of Communication Sciences, University of Salerno on the following themes: online payment systems, e-commerce CMS, Web languages (HTML, CSS, XML, PHP, Javascript). Reference: **Prof. Virgilio D'Antonio**.

During the academic year **2008/2009** I gave **4 seminars (12 hours)** on “**heuristic reasoning**” and “human biases in decision making” at the Department of Communication Sciences, University of Salerno in the courses of “**Decision Making and Knowledge Management**” and of “**Philosophy of Science**” held by the **Prof. Roberto Cordeschi**.

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### **Students and Thesis Supervision**

At the University of Torino (Department of Management) I have been **official advisor** of 5 bachelor **thesis** in web technologies and, at the Dept. of Computer Science, official **co-advisor** of 10 **thesis** (5 bachelor thesis, 5 master thesis) regarding the topics of: cognitive artificial systems, biologically inspired cognitive architectures, human computer interaction, conceptual modelling and formal ontologies, non monotonic extensions of ontological reasoning, affective computing, web technologies.

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### **Grants**

I won projects (as proponent) and have has been awarded grants for travels, invited talks and organisational activities (AIC workshop series) for **over 800k** Euros.

**September 2015:** a 5,000-Euros grant for the organisation of the AIC 2015 scientific workshop from the “Research and Talents Foundation” of the University of Turin.

**November 2014:** a 5,000-Euros ant for the organisation of the AIC 2014 scientific workshop from the Dept. of Computer Science, the Fondazione Rosselli and the Italian Association of Artificial Intelligence (AI\*IA).

**December 2013:** a 3,000- Euros grant from the Dept. of Computer Science of the University of Turin and from the Fondazione Rosselli for the organization of the AIC 2013 workshop.

**December 2012, February 2013 and June 2013:** I have been “invited visiting scholar” for participating at workshop series ConChaMo on the theme of Conceptual Change (<http://conceptualchange.it.helsinki.fi/>) organized by the Department of Physics of the University of Helsinki (Finland). Invitee: Prof. Ismo Koponen.

**February 2013:** I was one of the proponents (with Cristina Battaglino, Elena Gianaria, Marco Indaco, Alice Ruggeri, Manuela Sanguinetti) of the project “**E-Lisir**” about the automatic translation from the Italian language to the Italian Sign Language (LIS), that won a funding of **747k euros** in the national competition Smart Cities and Communities and Social Innovation: <http://attiministeriali.miur.it/anno-2013/febbraio/dd-28022013-%281%29.aspx/>.

## Awards

**July 2012.** Project award at SSSW2012 International Summer School on Ontology Engineering and Semantic Web, Cercedilla (Madrid), Spain. Project: Semi-Automatic Detection of Ontology Patterns. Team Members: M. Alirezaie (Orebro University, Sweden), **A. Lieto** (University of Turin, Italy), R. Khefifi (University of Paris Sud, France), C. Tampitsikas (Carnegie Mellon University, USA).

**July 2011. XXIII ESSLLI Summer School** (European Summer School in Logic, Language and Information), Ljubliana, Slovenia. I was one of the 4 students awarded with a full grant over hundreds of applicants: Links to the results: <http://web.archive.org/web/20131207035021/http://esslli2011.ijs.si/?p=1554>.

**January 2009.** Winner of the CEME Prize (Casertan Excellence Mobility Experience) within the Leonardo Da Vinci European Program (prize declined).

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## Scientific Affiliation (Associations)

- ACM – International Association for Computing Machinery
  - COGSCI – Cognitive Science Society
  - IAOA – International Association for Ontology and its Applications
  - AI\*IA - Italian Association for Artificial Intelligence
  - AISC - Italian Association for Cognitive Sciences
  - SILFS - Associazione Italiana di Logica e Filosofia della Scienza
  - AIUCD - Associazione Italiana per l'Informatica Umanistica e la Cultura Digitale
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Antonio Lieto*