# Special issue: Selected and revised papers from the 17th International Conference of the Italian Association for Artificial Intelligence

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Established in 1988, the Italian Association for Artificial Intelligence (AIxIA) has the role of increasing the knowledge of Artificial Intelligence (AI), fostering its teaching, and promoting both theoretical and applied research in the field through seminars, targeted initiatives and sponsorship of events. It is a a member of the European Association for Artificial Intelligence EurAI (formerly known as ECCAI) and, during the last decades, it has witnessed and supported the entire evolution of AI up to the recent success that led AI techniques to be pervasively used in everyday technology and in high-profile application domains.

Since 1989, AIxIA organizes its International Conference where a lively community interested in Artificial Intelligence research, tasks, and applications meet and exchange ideas and results in fruitful discussions. Originally a bi-annual event, the International Conference of the AIxIA has become an annual one since 2014. This change corresponded to a significant revision of the conference format, that now includes, in addition to the main track and invited talks, several poster sessions, a number of workshops (some focused on research topics, others on applications), tutorials, and a Doctoral Consortium. Best paper, best student paper and best Doctoral Consortium paper awards are also assigned to authors of distinguished papers. The program is often complemented by an open event targeted to the general public concerning the impact of Artificial Intelligence on society.

The 17th International Conference of the Italian Association for Artificial Intelligence (AIxIA 2018) was held in Trento, Italy, from November 20 to November 23, 2018. The conference was attended by almost 200 delegates, and 41 papers were selected for presentation at the conference. Among these, the General and Programme Chairs identified a set of papers that received particularly good reviews, that were invited to submit a revised and extended version. After a further round review process, the following eight papers were selected for this special issue:

— *MOCA: An ORM MOdel for Computational Accountability*, by Matteo Baldoni, Cristina Baroglio, Katherine Marie May, Roberto Micalizio and Stefano Tedeschi, proposing an information model for computational account-

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ability, expressed in Object-Role Modeling, which describes what data have to be available to allow, in any situation of interest arising from a group of interacting parties, the investigation and identification of accountability;

— *Ontology-based Data Access - Beyond Relational Sources*, by Elena Botoeva, Diego Calvanese, Benjamin Cogrel, Julien Corman and Guohui Xiao, presenting a generalisation of the well-known ontology-based data access (OBDA) framework to enable access to non-relational (also called NoSQL) databases, so as to allow for querying arbitrary data sources using SPARQL;

— *Counteracting the Filter Bubble in Recommender Systems: Novelty-aware Matrix Factorization*, by Ludovik Coba, Panagiotis Symeonidis and Markus Zanker, presenting a matrix factorisation method that simultaneously recommends accurate and novel items;

— *Enabling Deep Learning for Large Scale Question Answering in Italian*, by Danilo Croce, Alexandra Zelenanska and Roberto Basili, proposing the acquisition of a large scale dataset for an open-domain factoid question answering system in Italian by automatic translation and linguistic elicitation of an existing English dataset, i.e. the SQuAD question-answer pair corpus;

— *An ASP-based Framework for Operating Room Scheduling*, by Carmine Dodaro, Giuseppe Galatà, Marco Maratea and Ivan Porro, presenting an off-line and on-line solution based on Answer Set Programming for solving the task of assigning patients to operating rooms;

— *Coherence Constraints in Facial Expression Recognition*, by Lisa Graziani, Stefano Melacci and Marco Gori, investigating the use of various typpes of coherence constraints to improve the performance of a Convolutional Neural Network based architecture for facial expression recognition from images and videos;

— *Applying a Description Logic of Typicality as a Generative Tool for Concept Combination in Computational Creativity*, by Gian Luca Pozzato and Antonio Lieto, proposes a usage of a nonmonotonic Description Logic of typicality called "typical compositional logic" to account for the generation and the exploration of novel creative concepts;

— *Top-down Attention Recurrent VLAD Encoding for Action Recognition in Videos*, by Swathikiran Sudhakaran and Oswald Lanz, adressing the problem of action recognition from videos by proposing a deep recurrent neural architecture, with built-in spatial attention, that performs temporally aggregated Vector of Locally Aggregated Descriptors (VLAD) encodings.

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