

Preface

We are proud to present the proceedings of IDA 2015, the 14th International Symposium on Intelligent Data Analysis, which was held from October 22 to October 24, 2015, in Saint-Etienne, France.

The series started in 1995 and was held biennially until 2009. In 2010, the symposium re-focused to support papers that go beyond established technology and contain genuinely novel and game-changing ideas, while not always being as fully realized as papers accepted at other conferences. To further support this unique focus, IDA 2015 additionally included a so-called “Horizon Track”, which contained contributed talks about research that may be too preliminary for archival publication, but with a potentially very high impact. The IDA symposium is an interdisciplinary meeting that solicits contributions on all aspects of intelligent data analysis, including papers on intelligent support for modeling and analyzing data from complex, dynamical systems. Intelligent support for data analysis goes beyond the usual algorithmic offerings in the literature. Papers about established technology were only accepted if the technology was embedded in intelligent data analysis systems, or was applied in novel ways to analyzing and/or modeling complex systems.

The conventional reviewing process, which tends to favor incremental advances on established work, can discourage the kinds of papers that IDA 2015 has published. The reviewing process adopted for IDA addressed this issue explicitly: referees evaluated papers against the stated goals of the symposium, and an informed, thoughtful, positive review written by a Program Committee advisor could outweigh other, negative reviews and result in acceptance of the paper. Indeed, it was noted that this had a notable impact on the selection of papers included in the program. In addition, the new “Horizon Track” allowed researchers to present their most ground breaking research at the symposium without publishing it in the proceedings, stimulating discussions about the most exciting research ideas and visions at an early stage.

We were pleased to have a very strong program. We received 65 submissions in total. In all, 59 papers were submitted to the regular proceedings track, of which 29 were accepted for inclusion in this volume. Six papers were submitted to the Horizon Track, of which three were accepted for presentation at the symposium. The IDA Frontier Prize was awarded to the most visionary contribution. As in previous years, we included a poster and video track for PhD students to promote their work. The best 2-minute video, as decided by the participants of the symposium, was awarded the Video Prize.

We were honored to have three distinguished invited speakers at IDA 2015:

- Tony Veale from University College Dublin, Ireland, talked about “The Shape of Tweets to Come” and how Twitter presents a generative opportunity of another kind to the computationally-minded language researcher, to study how algorithmic models might impose linguistic hypotheses onto large data sources to compose novel and meaningful micro-texts of their own.

- Nick Heard from Imperial College London, UK, talked about “Combining Weak Statistical Evidence in Cyber Security” and how statistical modelling (and the use of p-values) of nodes and edges in a computer network can build up a picture of normal behavior in a system.
- Pascal Van Hentenryck from National ICT (NICTA), Australia, talked about “Evidence-Based Optimization”. He showed some case studies in disaster management, energy systems, high-performance computing, and market optimization and presented some emerging architectures for evidence-based optimization.

The conference was held in the buildings of Telecom Saint-Etienne Engineering School in front of the Hubert-Curien Laboratory. All those buildings were part of the new “Manufacture d’armes de Saint-Étienne” (MAS, known for example for the FAMAS assault rifle), built in 1864 and closed in 2001. They are now part of a new university campus dedicated to computer science and physics (and in particular, optics).

We wish to express our gratitude to all authors of submitted papers for their intellectual contributions; to the Program Committee members and the additional reviewers for their effort in reviewing and commenting on the submitted papers; to the members of the IDA Steering Committee for their ongoing guidance and support; and to the Program Committee advisors for their active involvement. Special thanks go to the poster and video chair, Jesse Read; the local chair, Baptiste Jeudy; the publicity chair, Edward Cohen; the sponsorship chair, François Jacquenet; the Frontier Prize chairs, Michael Berthold and Elizabeth Bradley; and the webmaster, Leonor Becerra-Bonache. We gratefully acknowledge those who were involved in the local organization of the symposium: Romain Deville, Rémi Emonet, Damien Fourure, Matthias Gery, Amaury Habrard, Christine Largeron, and Emilie Morvant.

Finally, we are grateful to our sponsors and supporters: KNIME, for funding the IDA Frontier Prize for the most visionary contribution presenting a novel and surprising approach to data analysis; the French Artificial Intelligence Association (AFIA), for funding the IDA Video Prize for the best video presented in the PhD poster and video track; the IT company Eura Nova; Jean Monnet University (UJM); the Artificial Intelligence journal; Télécom Saint-Etienne (for sharing their building); and Springer.

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