

Preface

This volume contains the main proceedings of the 2018 edition of the Extended Semantic Web Conference (ESWC 2018). ESWC is established as a yearly major venue for discussing the latest scientific results and technology innovations related to the Semantic Web and linked data. At ESWC, international scientists, industry specialists, and practitioners meet to discuss the future of applicable, scalable, user-friendly, as well as potentially game-changing solutions. The 15th edition took place from June 3rd to June 7th, 2018, in Heraklion, Crete (Greece).

Building on its past success, ESWC is also a venue for broadening the focus of the Semantic Web community to span other relevant research areas in which semantics and Web technology play an important role, as well as for experimenting with innovative practices and topics that deliver extra value to the community and beyond.

This year's conference has introduced some novelties compared with the past: a new open reviewing policy (see later); three main tracks instead of two: the usual research and in-use tracks, plus a novel resource track; a new industry session dedicated to experiences and results by semantic technology companies.

The research track is organized into subtracks, and the chairs of ESWC 2018 organized two special subtracks putting particular emphasis on usage areas where Semantic Web technologies are facilitating a leap of progress, namely: "Benchmarking and Empirical Evaluations" and "Semantic Web for Science."

The other events keep the legacy of the past: a poster and demo session, workshops and tutorials, a PhD symposium, a challenges track, a project networking session. The regular subtracks include: vocabularies, schemas, ontologies, reasoning, linked data (including knowledge graphs), social Web and Web science, semantic data management, natural language processing and information retrieval, machine learning, mobile Web, sensors and semantic streams, services, APIs, processes and cloud computing.

Concerning the open reviewing policy, ESWC 2018 adopted a double-open reviewing schema, additionally placing all papers (either accepted or rejected) on the conference website, jointly with their reviews (rejected papers will be removed after the conference upon the authors' request) and the names of the reviewers (except when they decided to opt out). Two special chairs, Silvio Peroni and Sarven Capadisli, produced the website branch hosting papers and reviews, and enabled visitors to provide comments. The reviewing data have been processed in order to obtain insights over the multiple facets involved in the process and its argumentation. The overall policy is original for a conference, but we have inherited the experience of the successful open reviewing applied by the *Semantic Web Journal*, championed by one of its editors-in-chief, Pascal Hitzler, who was the resource chair at ESWC 2018. Data analytics and user feedback reports from this innovative process were discussed at the opening and closing sessions of ESWC 2018.

Emerging from its roots in AI and Web technology, the Semantic Web today is mainly a Web of linked data and a reference model for all sorts of knowledge graphs

emerging in institutions, companies, and academia, upon which a plethora of services and applications for all possible domains are being proposed. Some of the core challenges that the Semantic Web aims at addressing are heterogeneity of content, and its volatile and rapidly changing nature, its uncertainty, provenance, and varying quality.

This, in combination with more traditional disciplines, such as logical modeling and reasoning, natural language processing, databases and data storage and access, machine learning, distributed systems, information retrieval and data mining, social networks, Web science and Web engineering, shows the span of topics covered by this conference. The nine regular research subtracks, in combination with resources and in-use tracks, and the two special research subtracks, constitute the main scientific program of ESWC 2018.

The main scientific program of the conference comprised 48 papers: 31 research, nine resources papers, eight in-use papers, selected out of 179 reviewed submissions, which corresponds to an acceptance rate of 23.5% for the research papers submitted, 41% for the resource papers, and 32% for the in-use papers. This program was completed by a demonstration and poster session (41 accepted out of 53 submissions), in which researchers had the chance to present their latest results and advances in the form of live demos or face-to-face presentations. In addition, the PhD symposium program included ten contributions, selected out of 17 submissions.

The conference program contained nine workshops, five tutorials, and an EU project networking session. This year, an open call also allowed us to select and support four challenges: Open Knowledge Extraction, Semantic Sentiment Analysis, Triple Store Performance, and Scalable Question-Answering over Linked Data. These associated events created an even more open, multidisciplinary, and cross-fertilizing environment at the conference, allowing for work-in progress and practical results to be discussed.

Workshops ranged from domain-focused topics, including the biomedical, scientific publishing, e-science, robotics, distributed ledgers, and scholarly fields, to more technology-focused topics ranging from RDF stream processing, query processing, data quality and data evolution, to sentiment analysis and semantic deep learning. Tutorial topics spanned NLP, ontology engineering, and linked data, including specific tutorials on knowledge graphs and rule-based processing of data. Proceedings from these satellite events are available in a separate volume.

The program also included three exciting invited keynotes, with topics ranging from the use of knowledge graphs in industrial applications, to traditional as well as novel Semantic Web topics.

The general and Program Committee chairs would like to thank the many people who were involved in making ESWC 2018 a success. First of all, our thanks go to the 24 co-chairs of the research track and the 360 reviewers for all tracks, including 49 external reviewers, for ensuring a rigorous and open review process that led to an excellent scientific program, and an average of four reviews per article. The scientific program was completed by an exciting selection of posters and demos chaired by Anna Lisa Gentile and Andrea Giovanni Nuzzolese.

Special thanks go to the PhD symposium chairs, Sebastian Rudolph and Maria Maleshkova, who managed one of the key events at ESWC. The brilliant PhD students will become the future leaders of our field, and deserve both encouragement and mentoring, which Maria and Sebastian made sure we could provide.

We also had a great selection of workshops and tutorials, as mentioned earlier, thanks to the commitment of our workshop and tutorial chairs, Heiko Paulheim and Jeff Pan.

Thanks to our EU project networking session chair, Maria Maleshkova, we had the opportunity to facilitate meetings and exciting discussions between leading European research projects. Networking and sharing ideas between projects is a crucial success factor for such large research projects.

We are additionally grateful for the work and commitment of Davide Buscaldi and Diego Reforgiato Recupero, and all the individual challenges chairs, who successfully established a challenge track.

Thanks to Andrea Conte for the organization of the industry track, which included six substantial presentations from companies that have started adopting Semantic Web technologies, and to York Sure for playing the ever-challenging sponsor chair role.

We thank STI International for supporting the conference organization, and particularly Dieter Fensel as the conference treasurer. YouVivo GmbH and Venja Lehmann in particular deserve special thanks for the professional support of the local conference organization and for solving all practical matters.

Further, we are very grateful to Mehwish Alam, our publicity and proceedings chair, who kept our community informed throughout the year and did an excellent job in preparing this volume with the kind support of Springer. We also thank Venislav Georgiev, who administered the website. We finally thank our sponsors, listed on the next pages, for their vital support of this edition of ESWC.

The general chair would like to close the preface with his warm thanks to the six program chairs for their relaxed but rigorous commitment in carrying out the novel open reviewing experiment, facing the thousands of questions and the few complaints from leading our peer community in an almost unknown territory, which will be a milestone for future events fostering openness in science.

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