

# Preface

This volume contains the main proceedings of the ESWC 2017 conference. The ESWC conference 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. This 14th edition took place from May 28 to June 1, 2017, in Portorož (Slovenia). 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 plays an important role. Thus, the chairs of ESWC 2017 organized two special tracks putting particular emphasis on usage areas where Semantic Web technologies are facilitating a leap of progress, namely: “Multilinguality” and “Semantic Web and Transparency.”

Emerging from its roots in AI and Web technology, the Semantic Web today is mainly a Web of linked data, 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 the 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 modelling 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 tracks, in combination with an in-use and applications track, and the two special tracks, constituted the main technical program of ESWC 2017.

The program also included three exciting invited keynotes. Lora Aroyo (Professor Human Computer Interaction Vrije Universiteit Amsterdam, The Netherlands, and Visiting Professor at Columbia University in the City of New York, USA) focused on the notion of ambiguity, discussing how ambiguity can be captured and even taken advantage of by capturing the diversity of interpretations. In particular, she discussed how to capture this diversity and how to allow machines to deal with it. Kevin Crosbie (Chief Product Officer, RavenPack) discussed the role of semantic intelligence in financial markets. In particular, he focused on the challenges of turning unstructured content into structured data, given that many new kinds of alternative data (social media, satellite imagery, etc.) are being used to complement traditional data for use in predictive modelling for financial trading algorithms. John Sheridan (Digital Director, The National Archives) discussed the use and benefits of Semantic Web technologies for digital archiving, in particular for managing heterogeneous metadata, dealing with uncertainty, and in areas such as provenance and trust.

The main scientific program of the conference comprised 51 papers: 40 research and 11 in-use and application papers, selected out of 183 reviewed submissions, which corresponds to an acceptance rate of 25% for the research papers submitted and 52%

for the in-use papers. A special thanks goes to our process improvement chair, Derek Doran, who helped us establish an improved quality assurance process during the paper selection, ensuring the originality and quality of the research papers that were accepted to the conference. This program was completed by a demonstration and poster session, in which researchers had the chance to present their latest results and advances in the form of live demos. In addition, the PhD Symposium program included ten contributions, selected out of 14 submissions.

This year's edition of ESWC's main scientific program presented a significant number of research papers with a focus on solving typical Semantic Web problems, such as entity linking, discoverability, etc., by using methods and techniques from areas such as machine learning and natural language processing, and reflecting in particular the current interest in deep learning. Work on both the fundamental development and use of Semantic Web technologies in relation to transparency is particularly interesting in view of current governmental and institutional open data initiatives.

The conference program also offered 12 workshops, six tutorials, and an EU Project Networking session. This year, an open call also allowed us to select and support five challenges. These associated events create 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 General and Program Committee chairs would like to thank the many people who were involved in making ESWC 2017 a success. First of all, our thanks go to the 24 track chairs and 360 reviewers, including 49 external reviewers, for ensuring a rigorous blind 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 Katja Hose and Heiko Paulheim.

Special thanks go to the PhD symposium chairs, Rinke Hoekstra and Pascal Hitzler, who managed one of the key events at ESWC, the PhD symposium. The brilliant PhD students will become the future leaders of our field, and deserve both encouragement and mentoring, which Rinke and Pascal 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 chairs, Agnieszka Ławrynowicz and Fabio Ciravegna, and tutorial chairs, Anna Lisa Gentile and Sebastian Rudolph.

Thanks to our EU Project Networking session chairs, Lyndon Nixon and 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 Monika Solanki, Mauro Dragoni, and all the individual challenges chairs, who successfully established a challenge track. The five challenges provided researchers and practitioners with the opportunity to compare their latest solutions in these challenge areas, ranging from

topic-focused tasks such as question answering and semantic sentiment analysis, to practical tasks such as storage, semantic publishing, and open knowledge extraction.

We thank STI International for supporting the conference organization, and particularly Alexander Wahler as the conference treasurer. YouVivo GmbH deserve special thanks for the professional support of the conference organization, and for solving all practical matters. Our local chair Marko Grobelnik also deserves a special thanks for selecting the venue and for, together with his local organizers, Marija Kokelj, Monika Kroje, and Spela Sitar, arranging a great on-site experience for our conference attendees.

Further, we are very grateful to Ruben Verborgh, our publicity chair, who kept our community informed throughout the year, and Venislav Georgiev, who administered the website. Of course we also thank our sponsors, listed on the next pages, for their vital support of this edition of ESWC. We would like to stress the great work achieved by the Semantic Technologies coordinators Lionel Medini and Luigi Asprino, who maintained and updated our ESWC mobile app and published our conference dataset. A special thanks also to our proceedings chair, Olaf Hartig, who did an excellent job in preparing this volume with the kind support of Springer.

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