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Advances in Information Retrieval

41st European Conference on IR Research, ECIR 2019
Cologne, Germany, April 14–18, 2019
Proceedings, Part I


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Preface

The 41st European Conference on Information Retrieval (ECIR) was held in Cologne, Germany, during April 14–18, 2019, and brought together hundreds of researchers from Europe and abroad. The conference was organized by GESIS – Leibniz Institute for the Social Sciences and the University of Duisburg-Essen—in cooperation with the British Computer Society’s Information Retrieval Specialist Group (BCS-IRSG).

These proceedings contain the papers, presentations, workshops, and tutorials given during the conference. This year the ECIR 2019 program boasted a variety of novel work from contributors from all around the world and provided new platforms for promoting information retrieval-related (IR) activities from the CLEF Initiative. In total, 365 submissions were fielded across the tracks from 50 different countries.

The final program included 39 full papers (23% acceptance rate), 44 short papers (29% acceptance rate), eight demonstration papers (67% acceptance rate), nine reproducibility full papers (75% acceptance rate), and eight invited CLEF papers. All submissions were peer reviewed by at least three international Program Committee members to ensure that only submissions of the highest quality were included in the final program. As part of the reviewing process we also provided more detailed review forms and guidelines to help reviewers identify common errors in IR experimentation as a way to help ensure consistency and quality across the reviews.

The accepted papers cover the state of the art in IR: evaluation, deep learning, dialogue and conversational approaches, diversity, knowledge graphs, recommender systems, retrieval methods, user behavior, topic modelling, etc., and also included novel application areas beyond traditional text and Web documents such as the processing and retrieval of narrative histories, images, jobs, biodiversity, medical text, and math. The program boasted a high proportion of papers with students as first authors, as well as papers from a variety of universities, research institutes, and commercial organizations.

In addition to the papers, the program also included two keynotes, four tutorials, four workshops, a doctoral consortium, and an industry day. The first keynote was presented by this year’s BCS IRSG Karen Sparck Jones Award winner, Prof. Krisztian Balog, On Entities and Evaluation, and the second keynote was presented by Prof. Markus Strohmaier, On Ranking People. The tutorials covered a range of topics from conducting lab-based experiments and statistical analysis to categorization and deep learning, while the workshops brought together participants to discuss algorithm selection (AMIR), narrative extraction (Text2Story), Bibliometrics (BIR), as well as social media personalization and search (SoMePeAS). As part of this year’s ECIR we also introduced a new CLEF session to enable CLEF organizers to report on and promote their upcoming tracks. In sum, this added to the success and diversity of ECIR and helped build bridges between communities.

The success of ECIR 2019 would not have been possible without all the help from the team of volunteers and reviewers. We wish to thank all our track chairs for

coordinating the different tracks along with the teams of meta-reviewers and reviewers who helped ensure the high quality of the program. We also wish to thank the demo chairs: Christina Lioma and Dagmar Kern; student mentorship chairs: Ahmet Aker and Laura Dietz; doctoral consortium chairs: Ahmet Aker, Dimitar Dimitrov and Zeljko Carevic; workshop chairs: Diane Kelly and Andreas Rauber; tutorial chairs: Guillaume Cabanac and Suzan Verberne; industry chair: Udo Kruschwitz; publicity chair: Ingo Frommholz; and sponsorship chairs: Jochen L. Leidner and Karam Abdulahhad. We would like to thank our webmaster, Sascha Schüller and our local chair, Nina Dietzel along with all the student volunteers who helped to create an excellent online and offline experience for participants and attendees.

ECIR 2019 was sponsored by: DFG (Deutsche Forschungsgemeinschaft), BCS (British Computer Society), SIGIR (Special Interest Group on Information Retrieval), City of Cologne, Signal Media Ltd, Bloomberg, Knowledge Spaces, Polygon Analytics Ltd., Google, Textkernel, MDPI Open Access Journals, and Springer. We thank them all for their support and contributions to the conference.

Finally, we wish to thank all the authors, reviewers, and contributors to the conference.

April 2019

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Keynote Papers

On Entities and Evaluation

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This talk addresses two broad topics, entities and evaluation, which have been the main focus of my research for over ten years. Over the past decade, we have witnessed entities becoming first-class citizens in many information access scenarios [1]. With this has also come an increased reliance on knowledge bases (a.k.a. knowledge graphs), which organize information about entities in a structured and semantically meaningful way. Knowledge bases have enabled significant advancements on specific retrieval tasks, such as entity retrieval and entity linking [2], as well as have contributed to the grand challenge effort of building intelligent personal assistants. The talk provides a brief synthesis of progress thus far, then highlights some open challenges that remain in this space. In particular, the concept of a *personal knowledge graph* is introduced, which is a resource of structured information about entities personally relevant to a given user. A range of tasks associated to personal knowledge graphs are also discussed.

The second part of the talk concentrates on evaluation, which has been a central theme in information retrieval since the inception of the field. For a long time, system-oriented evaluation has primarily been performed using offline test collections, following the Cranfield paradigm. While this rigorous methodology ensures the repeatability and reproducibility of experiments, it is inherently limited by abstracting the actual user, to a large extent, away. In this talk, an argument is made for the (complementary) need of online evaluation. Specifically, the “living labs” evaluation methodology is presented, along with past and current efforts to implement it as a collaborative research and development scheme [3, 4].

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Ranking People

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Abstract. The popularity of search engines on the World Wide Web is a testament to the broad impact of the work done by the information retrieval community over the last decades. The advances achieved by this community have not only made the World Wide Web more accessible, they have also made it appealing to consider the application of ranking algorithms to other domains, beyond the ranking of documents. One of the most interesting examples is the domain of *ranking people*. In this talk, I will first highlight some of the many challenges that come with deploying ranking algorithms to individuals. I will then show how mechanisms that are perfectly fine to utilize when ranking documents can have undesired or even detrimental effects when ranking people. This talk intends to stimulate a discussion on the manifold, interdisciplinary challenges around the increasing adoption of ranking algorithms in computational social systems.

Keywords: Information retrieval · Ranking · Computational social science

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