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# Advances in Information Retrieval

33rd European Conference on IR Research, ECIR 2011 Dublin, Ireland, April 18-21, 2011 Proceedings



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### **Preface**

These proceedings contain the papers presented at ECIR 2011, the 33rd European Conference on Information Retrieval. The conference was organized by Dublin City University in cooperation with the University of Sheffield, and was supported by the Information Retrieval Specialist Group at the British Computer Society (BCS-IRSG) and the Special Interest Group on Information Retrieval (ACM SIGIR). It was held during April 18–21, 2011 in Dublin, Ireland.

We greeted the attendees at ECIR 2011 with the following address: "Táimid an-bhrodúil fáilte a chur romhaibh chuig Baile Átha Cliath agus chuig an trocha triú Comhdháil Europeach ar Aisghabháil Faisnéise. Tá súil againn go mbeidh am iontach agaibh anseo in Éirinn agus go mbeidh bhur gcuairt taitneamhnach agus sásúil. Táimid an-bhrodúil go háirithe fáilte a chur roimh na daoine ón oiread sin tíortha difriúla agus na daoine a tháinig as i bhfad i gcéin. Tá an oiread sin páipéar curtha isteach chuigh an chomhdháil seo go bhfuil caighdeán na bpáipéar, na bpóstaer agus na léiriú an-ard ar fad agus táimid ag súil go mór le hócaid iontach. We are delighted to welcome you to Dublin for the 33rd annual European Conference on Information Retrieval. We hope that the attendees have a wonderful stay in Ireland and that their visits are both enjoyable and rewarding. We are very proud to welcome visitors from both Ireland and abroad and we are delighted to be able to include in the proceedings such high-quality papers, posters and demonstrations."

ECIR 2011 received a total 355 submissions across four categories; 223 fullpaper submissions, 48 short paper submissions, 52 poster submissions and 12 demonstration submissions. Of these submissions, 217 were from Europe (65%), 65 from Asia (19%), 44 from North and South America (13%) and 9 were from the Middle East and Africa (3%). All submissions were reviewed by at least three members of the 168-person International Program Committee, to whom we owe a debt of gratitude for providing their valuable time to ECIR 2011. Of the 223 full papers submitted, 45 were selected for oral presentation, which equates to a 20% acceptance rate. For short papers, a total of 17 were accepted for oral presentation. In addition, 24 posters and 6 demonstrations were accepted for ECIR 2011. We are pleased to note that ECIR maintained its student focus with 62% of the accepted publications having a student as the primary author. The accepted contributions represent the state of the art in information retrieval and cover a diverse range of topics including aggregated, distributed, enterprise, cross-lingual, domain-specific, interactive, multimedia and Web search, along with evaluation issues, search for social networks, the theory of IR, Q/A & NLP, recommendation and text categorization. One notable feature of 2011 was the growth of research into search technologies for social networks, which is reflected in its prominence in the ECIR 2011 program.

As in recent years, the conference was preceded by a day of workshops and tutorials. This format has proven successful at ECIR in recent years. At ECIR 2011, we hosted five workshops and four tutorials, based on the recommendation of the Workshop and Tutorial Committees.

The workshops covered a range of topical issues in information retrieval:

- Evaluating Personal Search Workshop (EPS 2011)
- Diversity in Document Retrieval (DDR 2011)
- Workshop Information Access for Personal Media Archives (IAPMA 2011)
- Information Management and Retrieval in Mobile Ad Hoc Societies Workshop (MASoc 2011)
- Information Retrieval over Query Sessions (IRQS 2011)

The four tutorials covered topics of advertising, users and risk management:

- Online Advertising: An Information Scientist's Perspective
- Web Search: The Role of Users
- Designing Effective Search and Discovery Experiences
- Risk Management in Information Retrieval

Following the success of previous BCS events, an IRSG Industry Day was organized that provided a topical selection of talks, panels and case studies from the world of search and information access with a focus on issues pertaining to IR practitioners. The Industry Day was collocated with ECIR 2011 and took place on the final day of the conference. Our thanks go to Udo Kruschwitz and Tony Russell-Rose for coordinating the ECIR 2011 Industry Day.

We would like to thank our invited keynote speakers, Kalervo Järvelin and Thorsten Joachims, for their stimulating contributions to the conference. We also thank the 2010 BCS/BCS-IRSG Karen Spärck Jones Award winner for his inspiring keynote. The recipient of the 2010 Karen Spärck Jones Award was announced at the conference; the award was presented to Evgeniy Gabrilovich in recognition of his contributions to advancing our understanding of IR and NLP through experimentation. The British Computer Society Information Retrieval Specialist Group (BCS IRSG) in conjunction with the BCS created the award to commemorate the achievements of Karen Spärck Jones. It is given annually to encourage and promote talented researchers who have endeavored to advance our understanding of information retrieval and/or natural language processing.

Special thanks go to the Workshops Chair, Leif Azzopardi, and the Tutorials Chair, Evangelos Kanoulas, and the members of their committees for their effort in selecting the workshops and tutorials for ECIR 2011. We thank the Student Mentor Chair, Nicola Stokes, for her superb efforts. We also acknowledge the commitment of our local organization team including Hyowon Lee (Proceedings and Advertising Chair), our website team of David Scott and Daragh Byrne and our local arrangements team of Colum Foley and Peter Wilkins. Special mention goes to Alan Smeaton for his constant availability to provide support and advice and to two previous General Chairs, Stefan Rüger and Mohand Boughanem, who provided valuable input at various points in the process.

In addition, we wish to thank all authors who spent their time and effort to submit their work to ECIR 2011, and all of the participants and student volunteers for their contributions and valuable support. Our gratitude also goes to the ECIR 2011 Program Committee members, the Award Committee members and other invited reviewers for more than 1,000 reviews which were required for ECIR 2011.

We are grateful to the sponsors for generously providing financial support for the conference, including Dublin City University, Science Foundation Ireland, Fáilte Ireland, Google, Microsoft Research, Bing, Yahoo! Research, CLARITY and CNGL. We would also like to thank the School of Computing at Dublin City University, in particular Stephen Blott and Mike Scott for their support as the heads of the School of Computing. Our special thanks go to Ann Marie Sweeney, Deirdre Sheridan, Krisztina Ligeti and all the CLARITY admin/support team, Anne Troy from the DCU Finance Department, Ana Terres from the DCU Office of the Vice President for Research, Harald Weinreich from ConfTool and our contacts in the Radisson Blu and the Guinness Storehouse.

Finally, we thank all of the attendees at ECIR 2011 who made the trip to Dublin.

April 2011

Cathal Gurrin Paul Clough Gareth J.F. Jones Wessel Kraaij Vanessa Murdoch

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#### Previous Venues of ECIR

ECIR began life as the BCS-IRSG Annual Colloquium on Information Retrieval Research and was held in the UK until 1998 when Grenoble, France, hosted the first non-UK-based colloquium. This reflected the increasingly international nature and greater size of the colloquium. The annual event also changed its name in 2001 from the Annual Colloquium on Information Retrieval to the European Annual Colloquium on Information Retrieval. This was followed by a change to become ECIR - The European Conference on Information Retrieval in 2003, which reflected the fact that ECIR had grown to become a full-blown international conference with a European focus. In its history, ECIR has taken place in the following locations:

```
Milton Keynes, UK
2010
2009
        Toulouse, France
2008
        Glasgow, UK
        Rome, Italy
2007
2006
        London, UK
2005
        Santiago de Compostela, Spain
2004
        Sunderland, UK
2003
       Pisa, Italy
2002
        Glasgow, UK
2001
        Darmstadt, Germany
2000
        Cambridge, UK
1999
        Glasgow, UK
        Grenoble, France
1998
1997
        Aberdeen, UK
1996
        Manchester, UK
1995
        Crewe, UK
1994
       Drymen, UK
        Glasgow, UK
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        Lancaster, UK
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        Huddersfield, UK
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1988
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1987
        Glasgow, UK
        Glasgow, UK
1986
1985
        Bradford, UK
        Bradford, UK
1984
1983
       Sheffield, UK
1982
        Sheffield, UK
1981
       Birmingham, UK
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Leeds, UK

Leeds, UK

1980

1979

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