

Giambattista Amati Claudio Carpineto  
Giovanni Romano (Eds.)

# Advances in Information Retrieval

29th European Conference on IR Research, ECIR 2007  
Rome, Italy, April 2-5, 2007  
Proceedings

 Springer

# Table of Contents

## Keynote Talks

The Next Generation Web Search and the Demise of the Classic IR Model . . . . .	1
<i>Andrei Broder</i>	
The Last Half-Century: A Perspective on Experimentation in Information Retrieval . . . . .	2
<i>Stephen Robertson</i>	
Learning in Hyperlinked Environments. . . . .	3
<i>Marco Gori</i>	

## Theory and Design

A. Parameterised Search System. . . . .	4
<i>Roberto Cornacchia and Arjen P. de Vries</i>	
Similarity Measures for Short Segments of Text . . . . .	16
<i>Donald Metzler, Susan Dumais, and, Christopher Meek</i>	
Multinomial Randomness Models for Retrieval with Document Fields... . . . .	28
<i>Vassilis Plachouras and Iadh Ounis</i>	
On Score Distributions and Relevance. . . . .	40
<i>Stephen Robertson</i>	
Modeling Term Associations for Ad-Hoc Retrieval Performance Within Language Modeling Framework . . . . .	52
<i>Xing Wei and W. Bruce Croft</i>	

## Efficiency

Static Pruning of Terms in Inverted Files . . . . .	64
<i>Roi Blanco and Alvaro Barreiro</i>	
Efficient Indexing of Versioned Document Sequences. . . . .	76
<i>Michael Herscovici, Ronny Lempel, and Sivan Yogev</i>	
Light Syntactically-Based Index Pruning for Information Retrieval . . . . .	88
<i>Christina Lioma and Iadh Ounis</i>	
Sorting Out the Document Identifier Assignment Problem . . . . .	101
<i>Fabrizio Silvestri</i>	
Efficient Construction of FM-index Using Overlapping Block Processing for Large Scale Texts. . . . .	113
<i>Di Zhang, Yunqnan Zhang, and Jing Chen</i>	

## Peer-to-Peer Networks (In Memory of Henrik Nottelmann)

Performance Comparison of Clustered and Replicated Information Retrieval Systems . . . . .	124
<i>Fidel Cacheda, Victor Carneiro, Vassilis Plachouras, and Iadh Ounis</i>	
A Study of a Weighting Scheme for Information Retrieval in Hierarchical Peer-to-Peer Networks . . . . .	136
<i>Massimo Melucci and Alberto Poggiani</i>	
A Decision-Theoretic Model for Decentralised Query Routing in Hierarchical Peer-to-Peer Networks . . . . .	148
<i>Henrik Nottelmann and Nbrbert Fuhr</i>	
Central-Rank-Based Collection Selection in Uncooperative Distributed Information Retrieval . . . . .	160
<i>Milad Shokouhi</i>	

!

## Result Merging

Results Merging Algorithm Using Multiple Regression Models . . . . .	173
<i>George Paltoglou, Michail Salampasis, and Maria Satratzemi</i>	
Segmentation of Search Engine Results for Effective Data-Fusion . . . . .	185
<i>Milad Shokouhi</i>	

## Queries

Query Hardness Estimation Using Jensen-Shannon Divergence Among Multiple Scoring Functions . . . . .	198
<i>Javed A. A slam and Virgil Pavlu</i>	
Query Reformulation and Refinement Using NLP-Based Sentence Clustering . . . . .	210
<i>Frederic Roulland, Aaron Kaplan, Stefania, Castellani, Claude Roux, Antonietta Grasso, Karin Pettersson, and, Jacki O'Neill</i>	
Automatic Morphological Query Expansion Using Analogy-Based Machine Learning . . . . .	222
<i>Fabienne Moreau, Vincent Claveau, and Pascale Sebillot</i>	
Advanced Structural Representations for Question Classification and Answer Re-ranking . . . . .	234
<i>Silvia Quarteroni, Alessandro Moschitti, Suresh Manandhar, and, Roberto Basili</i>	

## Relevance Feedback

Incorporating Diversity and Density in Active Learning for Relevance Feedback . . . . .	246
<i>Zuobing Xu, Ram Akella, and Yi Zhang</i>	

Relevance Feedback Using Weight Propagation Compared with Information-Theoretic Query Expansion . . . . .	258
<i>Fadi Yarnout, Michael Oakes, and John Tait</i>	
<b>Evaluation</b>	
A Retrieval Evaluation Methodology for Incomplete Relevance Assessments . . . . .	271
<i>Mark Baillie, Lei Azzopardi, and Ian Ruthven</i>	
Evaluating Query-Independent Object Features for Relevancy Prediction . . . . .	283
<i>Andres R. Masegosa, Ildejo Joho, and Joernon Ad. Jose</i>	
<b>Classification and Clustering</b>	
The Utility of Information Extraction in the Classification of Books . . . . .	295
<i>Tom Betts, Maria Milosavljevic, and Jon Oberlander</i>	
Combined Syntactic and Semantic Kernels for Text Classification . . . . .	307
<i>Stephan Bloehdorn and Alessandro Moschitti</i>	
Fast Large-Scale Spectral Clustering by Sequential Shrinkage Optimization . . . . .	319
<i>Tie-Yan Liu, Huai-Yuan Yang, Xin Zheng, Tao Qin, and Wei-Ying Ma</i>	
A Probabilistic Model for Clustering Text Documents with Multiple Fields . . . . .	331
<i>Shanfeng Zhu, Ichigaku Takigawa, Shuqin Zhang, and Hiroshi Mamitsuka</i>	
<b>Filtering</b>	
Personalized Communities in a Distributed Recommender System . . . . .	343
<i>Sylvaw, Castagnos and Anne Boyer</i>	
Information Recovery and Discovery in Collaborative Web Search . . . . .	356
<i>Maurice Coyle and Barry Smyth</i>	
Collaborative Filtering Based on Transitive Correlations Between Items . . . . .	368
<i>Alexandras Nanopoulos</i>	
Entropy-Based Authorship Search in Large Document Collections . . . . .	381
<i>Ying Zhao and Justin Zobel</i>	
<b>Topic Identification</b>	
Use of Topicality and Information Measures to Improve Document Representation for Story Link Detection . . . . .	393
<i>Chirag Shah and Koji Eguchi</i>	

Ad Hoc Retrieval of Documents with Topical Opinion . . . . .	405
<i>Jason Skomorowski and, Olga, Vechtomova</i>	
<b>Expert Finding</b>	
Probabilistic Models for Expert Finding . . . . .	418
<i>Hui Fang and ChengXiang Zhai</i>	
Using Relevance Feedback in Expert Search . . . . .	431
<i>Craig Macdonald, and Iadh Owns</i>	
<b>XML IR</b>	
Using Topic Shifts for Focussed Access to XML Repositories. . . . .	444
<i>Elham Ashoori and Mounia Lalmas</i>	
Feature- and Query-Based Table of Contents Generation for XML Documents . . . . .	456
<i>Zoltdn Szldvik, Anastasios Tombros,\ and Mounia Laim,as</i>	
<b>Web IR</b>	
Setting Per-field Normalisation Hyper-parameters for the Named-Page Finding Search Task . . . . .	468
<i>Ben He and Iadh Ounis</i>	
Combining Evidence for Relevance Criteria: A Framework and Experiments in Web Retrieval . . . . .	481
<i>Theodora Tsikrika and Mounia Lalmas</i>	
<b>Multimedia IR</b>	
Classifier Fusion for SVM-Based Multimedia Semantic Indexing . . . . .	494
<i>Stephane Ayache, Georges Quenot, and Jerome Gensel</i>	
Search of Spoken Documents Retrieves Well Recognized Transcripts ....	505
<i>Mark Sanderson and Xiao Mang Shou</i>	
<b>Short Papers</b>	
Natural Language Processing for Usage Based Indexing of Web Resources. . . . .	517
<i>Anne Boyer and Arm.elle Brim,</i>	
Harnessing Trust in Social Search . . . . .	525
<i>Peter Briggs and Barry Smyth</i>	
How to Compare Bilingual to Monolingual Cross-Language Information Retrieval . . . . .	533
<i>Franco Crivellan, Giorgio Maria Di Nunzio, and, Nicola, Ferro</i>	
Multilingual Text Classification Using Ontologies . . . . .	541
<i>Gerard de Melo and Stefan Siersdorfer</i>	

Using Visual-Textual Mutual Information and Entropy for Inter-modal Document Indexing . . . . .	549
<i>Jean Martinet and Shin'ichi Satoh</i>	
A Study of Global Inference Algorithms in Multi-document Summarization . . . . .	557
<i>Ryan McDonald</i>	
Document Representation Using Global Association Distance Model . . . . .	565
<i>Jose E. Medina-Pagola, Ansel Y. Rodriguez, Abdel Hechavarria, and Jose Hernandez Palancor</i>	
Sentence Level Sentiment Analysis in the Presence of Conjuncts Using Linguistic Analysis. . . . .	573
<i>Arun Meena and T. V. Prabhakar</i>	
PageRank: When Order Changes. . . . .	581
<i>Massimo Melucci and Luca Pretto</i>	
Model Tree Learning for Query Term Weighting in Question Answering. . . . .	589
<i>Christof Monz</i>	
Examining Repetition in User Search Behavior. . . . .	597
<i>Mark Sanderson and, Susan Durnais-</i>	
Popularity Weighted Ranking for Academic Digital Libraries . . . . .	605
<i>Yang Sun and C. Lee Giles</i>	
Naming Functions for the Vector Space Model. . . . .	613
<i>Yannis Tzitzikas and Yannis Theoharis</i>	
Effective Use of Semantic Structure in XML Retrieval. . . . .	621
<i>Roelof van Zwol and Tim, van Loosbroek</i>	
Searching Documents Based on Relevance and Type. . . . .	629
<i>Jim Xu, Yunbo Cao, Hang Li, Nick' Craswell, and Yalou Huang</i>	
Investigation of the Effectiveness of Cross-Media Indexing. . . . .	637
<i>Murat Yakici and, Fabio Crestani</i>	
Improve Ranking by Using Image Information. . . . .	645
<i>Qing Yu, Shaming Shi, Zhiwei Li, Ji-Rong Wen, and, Wei- Yinq Ma</i>	
<i>N-Step PageRank for Web Search. . . . .</i>	653
<i>Li Zhang, Tao Qin, Tie-Yan Liu, Ying Bao, and, Hang Li</i>	
Authorship Attribution Via Combination of Evidence. . . . .	661
<i>Ying Zhao and, Phil Vines</i>	
<b>Posters</b>	
Cross-Document Entity Tracking . . . . .	670
<i>Roxana Angheluta and, Marie-Francine Moens</i>	

Enterprise People and Skill Discovery Using Tolerant Retrieval and Visualization . . . . .	» 674
<i>Jan Brunnerl, Omar' Alonso, and, Dirk Riehle</i>	
Experimental Results of the Signal Processing Approach to Distributional Clustering of Terms on <i>Reuters-21578</i> Collection. . . . .	678
<i>Marta Capdevila Dalmau and Oscar W. Mdrquez Florez</i>	
Overall Comparison at the Standard Levels of R.ecall of Multiple Retrieval Methods with the Friedman Test . . . , . . . . .	682
<i>Jose M. Casanova, Manuel A. Presedo Quindimil, and Alvaro Barreiro</i>	
Building a Desktop Search Test-Bed . . . . .	686
<i>Sergey Chernov, Pavel Serdyukov, Paul-Alexandrii Chirita, Gianluca Demartini, and Wolfgang Nejdl</i>	
Hierarchical Browsing of Video Key Frames. . . . .	691
<i>Gianluigi Ciocca and Raimondo Schettini</i>	
Active Learning with History-Based Query Selection for Text Categorisation . . . . .	695
<i>Michael Davy and, Saturnino Luz</i>	
Fighting Link Spam with a Two-Stage Ranking Strategy. . . . .	699
<i>Guang-Gang Geng, Chun-Heng Wang, Qiu-Dan Li. and Yuan-Ping Zhu</i>	
Improving Naive Bayes Text Classifier Using Smoothing Methods. . . . .	703
<i>Feng He and Xiaoqing Ding</i>	
Term Selection and Query Operations for Video Retrieval. . . . .	708
<i>Bouke Huurnmk and, Maarlen de Rijke</i>	
An Effective Threshold-Based Neighbor Selection in Collaborative Filtering . . . . .	712
<i>Ta.ek-Hun Kim and Sung-Bong Yang</i>	
Combining Multiple Sources of Evidence in XML Multimedia Documents: An Inference Network Incorporating Element Language Models . . . . .	716
<i>Zhigang Kong and Mounia Lalmas</i>	
Language Model Based Query Classification . . . . .	720
<i>Andreas Merkel and Dietrich Klakow</i>	
Integration of Text and Audio Features for Genre Classification in Music Information Retrieval. . . . .	724
<i>Robert Neumayer and Andreas Rauber</i>	
Retrieval Method for Video Content in Different Format Based on Spatiotemporal Features. . . . .	728
<i>Xuefeng Pan, Jmtao Li, Yongdong Zhang, Sheng Tang, and, Juan Cao</i>	

Combination of Document Priors in Web Information Retrieval . . . . .	732
<i>Jie Peng and, Iadh Ounis</i>	
Enhancing Expert Search Through Query Modeling . . . . .	737
<i>Pavel Serdyukov, Sergey Chernov, and Wolfgang Nejdl</i>	
A Hierarchical Consensus Architecture for Robust Document Clustering . . . . .	741
<i>Xavier Sevillano, German Cobo, Francesc Alias, and Joan Claudi Socoro</i>	
Summarisation and Novelty: An Experimental Investigation . . . . .	745
<i>Simon Sweeney, Fabio Crestani, and, David E. Losada</i>	
A Layered Approach to Context-Dependent User Modelling . . . . .	749
<i>Elena Vildjiounaite and Sanna Kallio</i>	
A Bayesian Approach for Learning Document Type Relevance . . . . .	753
<i>Peter C.K. Yeung, Stefan Buttcher, Charles L.A. Clarke, and Maheedhar Kolla</i>	
<b>Author Index</b> . . . . .	757