

References

- Adams, R. A. (2007). Music Recommendation using Collaborative Filtering with Similarity Fusion. Master's thesis, Department of Computer Science, The University of York.
- Adomavicius, G. and Tuzhilin, A. (2005). Toward the next generation of recommender systems: a survey of the state-of-the-art and possible extensions. *IEEE Transactions on Knowledge and Data Engineering*, 17(6):734–749.
- Adomavicius, G., Tuzhilin, A., Berkovsky, S., De Luca, E. W., and Said, A. (2010). Context-awareness in recommender systems: research workshop and movie recommendation challenge. In *Proceedings of the fourth ACM conference on Recommender systems*, RecSys '10, pages 385–386, New York, NY, USA. ACM.
- Aggarwal, C. C., Wolf, J. L., Wu, K.-L., and Yu, P. S. (1999). Hatching hatches an egg: a new graph-theoretic approach to collaborative filtering. In *the fifth ACM SIGKDD international conference*, pages 201–212, New York, New York, USA. ACM Press.
- Agrawal, R., Gollapudi, S., Halverson, A., and Ieong, S. (2009). Diversifying search results. In *Proceedings of the Second ACM International Conference on Web Search and Data Mining*, WSDM '09, pages 5–14, New York, NY, USA. ACM.
- Aizawa, A. (2003). An information-theoretic perspective of tf-idf measures. *Information Processing & Management*, 39(1):45–65.
- Albert, R. and Barabási, A. L. (2002). Statistical mechanics of complex networks. *Reviews of Modern Physics*, 74(1):47–97.
- Ali, K. and van Stam, W. (2004). TiVo: making show recommendations using a distributed collaborative filtering architecture. In *Proceedings of the tenth ACM SIGKDD international conference on Knowledge discovery and data mining*, KDD '04, pages 394–401, New York, NY, USA. ACM.
- Allan, J. and Raghavan, H. (2002). Using Part-of-speech Patterns to Reduce Query Ambiguity. In *25th annual international ACM SIGIR conference on Research and development in information retrieval*, pages 307–314.
- Alvarez, M. M., Yahyaei, S., and Roelleke, T. (2012). Semi-automatic document classification: Exploiting document difficulty. In Baeza Yates, R. A., de Vries, A. P., Zaragoza, H., Cambazoglu, B. B., Murdock, V., Lempel, R., Silvestri, F., Baeza Yates, R. A., de Vries, A. P., Zaragoza, H., Cambazoglu, B. B., Murdock, V., Lempel, R., and Silvestri, F., editors, *ECIR*, volume 7224 of *Lecture Notes in Computer Science*, pages 468–471. Springer.

- Amati, G., Carpineto, C., and Romano, G. (2004). Query Difficulty, Robustness, and Selective Application of Query Expansion. *Advances in Information Retrieval*, pages 127–137.
- Arazy, O., Kumar, N., and Shapira, B. (2009). Improving social recommender systems. *IT Professional*, 11(4):38–44.
- Armstrong, T. G., Moffat, A., Webber, W., and Zobel, J. (2009a). Has adhoc retrieval improved since 1994? In Allan, J., Aslam, J. A., Sanderson, M., Zhai, C., and Zobel, J., editors, *SIGIR*, pages 692–693. ACM.
- Armstrong, T. G., Moffat, A., Webber, W., and Zobel, J. (2009b). Improvements that don't add up: ad-hoc retrieval results since 1998. In *Proceedings of the 18th ACM conference on Information and knowledge management*, CIKM '09, pages 601–610, New York, NY, USA. ACM.
- Aslam, J. A. and Pavlu, V. (2007). Query Hardness Estimation Using Jensen-Shannon Divergence Among Multiple Scoring Functions. In *ECIR*, pages 198–209.
- Aslam, J. A., Pavlu, V., and Yilmaz, E. (2006). A statistical method for system evaluation using incomplete judgments. In *Proceedings of the 29th annual international ACM SIGIR conference on Research and development in information retrieval*, SIGIR '06, pages 541–548, New York, NY, USA. ACM.
- Baeza-Yates, R. and Ribeiro-Neto, B. (2011). *Modern Information Retrieval: The Concepts and Technology behind Search (2nd Edition)* (ACM Press Books). Addison-Wesley Professional, 2 edition.
- Balabanovic, M. and Shoham, Y. (1997). Fab: content-based, collaborative recommendation. *Commun. ACM*, 40(3):66–72.
- Baltrunas, L. and Amatriain, X. (2009). Towards Time-Dependant Recommendation based on Implicit Feedback. In *Context-aware Recommender Systems Workshop at Recsys09*.
- Bao, X., Bergman, L., and Thompson, R. (2009). Stacking recommendation engines with additional meta-features. In *Proceedings of the third ACM conference on Recommender systems*, RecSys '09, pages 109–116, New York, NY, USA. ACM.
- Barbieri, N., Costa, G., Manco, G., and Ortale, R. (2011). Modeling item selection and relevance for accurate recommendations: a bayesian approach. In *Proceedings of the fifth ACM conference on Recommender systems*, RecSys '11, pages 21–28, New York, NY, USA. ACM.
- Barman, K. and Dabeer, O. (2010). What is Popular Amongst Your Friends?
- Basu, C., Hirsh, H., and Cohen, W. W. (1998). Recommendation as Classification: Using Social and Content-Based Information in Recommendation. In *AAAI/IJCAI*, pages 714–720.
- Belkin, N. J. and Croft, W. B. (1992). Information filtering and information retrieval: two sides of the same coin? *Commun. ACM*, 35(12):29–38.

- Bell, R. M. and Koren, Y. (2007). Scalable Collaborative Filtering with Jointly Derived Neighborhood Interpolation Weights. In *ICDM '07: Proceedings of the 2007 Seventh IEEE International Conference on Data Mining*, pages 43–52, Washington, DC, USA. IEEE Computer Society.
- Bellogín, A. (2009). Performance prediction in recommender systems: application to the dynamic optimisation of aggregative methods. Master's thesis, Escuela Politécnica Superior, Universidad Autónoma de Madrid, Madrid, Spain.
- Bellogín, A., Cantador, I., and Castells, P. (2010). A study of heterogeneity in recommendations for a social music service. In *Proceedings of the 1st International Workshop on Information Heterogeneity and Fusion in Recommender Systems*, HetRec '10, pages 1–8, New York, NY, USA. ACM.
- Bellogín, A., Cantador, I., Díez, F., Castells, P., and Chavarriaga, E. (2012). An empirical comparison of social, collaborative filtering, and hybrid recommenders. *ACM Transactions on Intelligent Systems and Technology*, to appear.
- Bellogín, A. and Castells, P. (2010). A Performance Prediction Approach to Enhance Collaborative Filtering Performance. In Gurrin, C., He, Y., Kazai, G., Kruschwitz, U., Little, S., Roelleke, T., Rüger, S., and Rijsbergen, editors, *Advances in Information Retrieval*, volume 5993 of *Lecture Notes in Computer Science*, pages 382–393, Berlin, Heidelberg. Springer Berlin / Heidelberg.
- Bellogín, A., Castells, P., and Cantador, I. (2011a). Precision-oriented evaluation of recommender systems: an algorithmic comparison. In *Proceedings of the fifth ACM conference on Recommender systems*, RecSys '11, pages 333–336, New York, NY, USA. ACM.
- Bellogín, A., Wang, J., and Castells, P. (2011b). Text Retrieval Methods for Item Ranking in Collaborative Filtering. In Clough, P., Foley, C., Gurrin, C., Jones, G., Kraaij, W., Lee, H., and Mardoch, V., editors, *Advances in Information Retrieval*, volume 6611 of *Lecture Notes in Computer Science*, chapter 30, pages 301–306. Springer Berlin / Heidelberg, Berlin, Heidelberg.
- Ben-Shimon, D., Tsikinovsky, A., Rokach, L., Meisles, A., Shani, G., and Naamani, L. (2007). Recommender System from Personal Social Networks Advances in Intelligent Web Mastering. In Wegrzyn-Wolska, K. and Szczepaniak, P., editors, *Advances in Intelligent Web Mastering*, volume 43 of *Advances in Soft Computing*, chapter 8, pages 47–55. Springer Berlin / Heidelberg, Berlin, Heidelberg.
- Bennett, J. and Lanning, S. (2007). The netflix prize. In *Proceedings of the KDD Cup Workshop 2007*, pages 3–6, New York. ACM.
- Berberich, K., Bedathur, S., Alonso, O., and Weikum, G. (2010). A language modeling approach for temporal information needs. In Gurrin, C., He, Y., Kazai, G., Kruschwitz, U., Little, S., Roelleke, T., Rüger, S., and Rijsbergen, K., editors, *Advances in Information Retrieval*, volume 5993 of *Lecture Notes in Computer Science*, pages 13–25, Berlin, Heidelberg. Springer Berlin / Heidelberg.

- Bernhardsson, E. (2009). Implementing a scalable music recommender system. Master's thesis, School of Engineering Physics, Royal Institute of Technology, Stockholm, Sweden.
- Best, D. J. and Gipps, P. G. (1974). Algorithm AS 71: The upper tail probabilities of kendall's tau. *Journal of the Royal Statistical Society. Series C (Applied Statistics)*, 23(1):98–100.
- Billsus, D. and Pazzani, M. J. (1998). Learning collaborative information filters. In Shavlik, J. W. and Shavlik, J. W., editors, *ICML*, pages 46–54. Morgan Kaufmann.
- Blei, D. M., Ng, A. Y., and Jordan, M. I. (2003). Latent dirichlet allocation. *J. Mach. Learn. Res.*, 3:993–1022.
- Bollen, D., Knijnenburg, B. P., Willemse, M. C., and Graus, M. (2010). Understanding choice overload in recommender systems. In *RecSys '10: Proceedings of the fourth ACM conference on Recommender systems*, pages 63–70, New York, NY, USA. ACM.
- Bourke, S., McCarthy, K., and Smyth, B. (2011). Power to the people: exploring neighbourhood formations in social recommender system. In *Proceedings of the fifth ACM conference on Recommender systems*, RecSys '11, pages 337–340, New York, NY, USA. ACM.
- Bradley, K. and Smyth, B. (2001). Improving Recommendation Diversity. In *Proceedings of the Twelfth Irish Conference on Artificial Intelligence and Cognitive Science*.
- Brants, T., Chen, F., and Tschantaridis, I. (2002). Topic-based document segmentation with probabilistic latent semantic analysis. In *CIKM*, CIKM '02, pages 211–218, New York, NY, USA. ACM.
- Breese, J. S., Heckerman, D., and Kadie, C. (1998). Empirical Analysis of Predictive Algorithms for Collaborative Filtering. In *Proceedings of the 14th Annual Conference on Uncertainty in Artificial Intelligence (UAI-98)*, pages 43–52.
- Brin, S. and Page, L. (1998). The anatomy of a large-scale hypertextual Web search engine. *Computer Networks and ISDN Systems*, 30(1–7):107–117.
- Broder, A. (2002). A taxonomy of web search. *SIGIR Forum*, 36(2):3–10.
- Buckley, C. (2004). Topic prediction based on comparative retrieval rankings. In Sanderson, M., Järvelin, K., Allan, J., Bruza, P., Sanderson, M., Järvelin, K., Allan, J., and Bruza, P., editors, *SIGIR*, pages 506–507, New York, NY, USA. ACM.
- Buckley, C., Dimmick, D., Soboroff, I., and Voorhees, E. (2006). Bias and the limits of pooling. In *Proceedings of the 29th annual international ACM SIGIR conference on Research and development in information retrieval*, SIGIR '06, pages 619–620, New York, NY, USA. ACM.
- Buckley, C., Dimmick, D., Soboroff, I., and Voorhees, E. (2007). Bias and the limits of pooling for large collections. *Information Retrieval*, 10(6):491–508.
- Burke, R. (2002). Hybrid Recommender Systems: Survey and Experiments. *User Modeling and User-Adapted Interaction*, 12(4):331–370.

- Burke, R. (2004). Hybrid Recommender Systems with Case-Based Components. pages 91–105.
- Burke, R. (2010). Evaluating the dynamic properties of recommendation algorithms. In *RecSys '10: Proceedings of the fourth ACM conference on Recommender systems*, pages 225–228, New York, NY, USA. ACM.
- Cantador, I. (2008). *Exploiting the conceptual space in hybrid recommender systems: a semantic-based approach*. PhD thesis, Universidad Autonoma de Madrid.
- Cantador, I., Bellogín, A., and Vallet, D. (2010). Content-based recommendation in social tagging systems. In *Proceedings of the fourth ACM conference on Recommender systems*, RecSys '10, pages 237–240, New York, NY, USA. ACM.
- Cantador, I., Brusilovsky, P., and Kuflík, T. (2011). Second workshop on information heterogeneity and fusion in recommender systems (HetRec2011). In *Proceedings of the fifth ACM conference on Recommender systems*, RecSys '11, pages 387–388, New York, NY, USA. ACM.
- Cantador, I. and Castells, P. (2006). Multilayered Semantic Social Network Modeling by Ontology-Based User Profiles Clustering: Application to Collaborative Filtering. In *Managing Knowledge in a World of Networks*, pages 334–349.
- Carmel, D. and Yom-Tov, E. (2010). *Estimating the Query Difficulty for Information Retrieval*. Synthesis Lectures on Information Concepts, Retrieval, and Services. Morgan & Claypool Publishers.
- Carmel, D., Yom-Tov, E., Darlow, A., and Pelleg, D. (2006). What makes a query difficult? In *SIGIR '06: Proceedings of the 29th annual international ACM SIGIR conference on Research and development in information retrieval*, pages 390–397, New York, NY, USA. ACM.
- Celma, O. (2008). *Music Recommendation and Discovery in the Long Tail*. PhD thesis, Universitat Pompeu Fabra, Barcelona, Spain.
- Celma, O. (2010). *Music Recommendation and Discovery: The Long Tail, Long Tail, and Long Play in the Digital Music Space*. Springer, 1st edition. edition.
- Celma, O. and Cano, P. (2008). From hits to niches?: or how popular artists can bias music recommendation and discovery. In *NETFLIX '08: Proceedings of the 2nd KDD Workshop on Large-Scale Recommender Systems and the Netflix Prize Competition*, pages 1–8, New York, NY, USA. ACM.
- Celma, O. and Herrera, P. (2008). A new approach to evaluating novel recommendations. In *RecSys '08: Proceedings of the 2008 ACM conference on Recommender systems*, pages 179–186, New York, NY, USA. ACM.
- Chandar, P. and Carterette, B. (2010). Diversification of search results using webgraphs. In *Proceeding of the 33rd international ACM SIGIR conference on Research and development in information retrieval*, SIGIR '10, pages 869–870, New York, NY, USA. ACM.

- Clarke, C. L. A., Kolla, M., Cormack, G. V., Vechtomova, O., Ashkan, A., Büttcher, S., and MacKinnon, I. (2008). Novelty and diversity in information retrieval evaluation. In *Proceedings of the 31st annual international ACM SIGIR conference on Research and development in information retrieval*, SIGIR '08, pages 659–666, New York, NY, USA. ACM.
- Clements, M., de Vries, A., and Reinders, M. J. T. (2009). Exploiting Positive and Negative Graded Relevance Assessments for Content Recommendation. In *Proceedings of the 6th International Workshop on Algorithms and Models for the Web-Graph*, WAW '09, pages 155–166, Berlin, Heidelberg. Springer-Verlag.
- Clements, M., De Vries, A. P., and Reinders, M. J. T. (2010). The task-dependent effect of tags and ratings on social media access. *ACM Trans. Inf. Syst.*, 28.
- Cover, T. M. and Thomas, J. A. (1991). *Elements of Information Theory*. Wiley-Interscience, 99th edition.
- Cremonesi, P., Garzotto, F., Negro, S., Papadopoulos, A., and Turrin, R. (2011). Comparative evaluation of recommender system quality. In *Proceedings of the 2011 annual conference extended abstracts on Human factors in computing systems*, CHI EA '11, pages 1927–1932, New York, NY, USA. ACM.
- Cremonesi, P., Koren, Y., and Turrin, R. (2010). Performance of recommender algorithms on top-n recommendation tasks. In *Proceedings of the fourth ACM conference on Recommender systems*, RecSys '10, pages 39–46, New York, NY, USA. ACM.
- Croft, B., Metzler, D., and Strohman, T. (2009). *Search Engines: Information Retrieval in Practice*. Addison Wesley, 1 edition.
- Cronen-Townsend, S., Zhou, Y., and Croft, W. B. (2002). Predicting query performance. In *Proceedings of the 25th annual international ACM SIGIR conference on Research and development in information retrieval*, SIGIR '02, pages 299–306, New York, NY, USA. ACM.
- Cronen-Townsend, S., Zhou, Y., and Croft, W. B. (2006). Precision prediction based on ranked list coherence. *Information Retrieval*, 9(6):723–755.
- Cummins, R. (2012). Investigating performance predictors using monte carlo simulation and score distribution models. In *Proceedings of the 35th international ACM SIGIR conference on Research and development in information retrieval*, SIGIR '12, pages 1097–1098, New York, NY, USA. ACM.
- Cummins, R., Jose, J., and O'Riordan, C. (2011). Improved query performance prediction using standard deviation. In *Proceedings of the 34th international ACM SIGIR conference on Research and development in Information*, SIGIR '11, pages 1089–1090, New York, NY, USA. ACM.
- Dang, V., Bendersky, M., and Croft, W. B. (2010). Learning to rank query reformulations. In Crestani, F., Maillet, S. M., Chen, H. H., Efthimiadis, E. N., Savoy, J., Crestani, F., Maillet, S. M., Chen, H. H., Efthimiadis, E. N., and Savoy, J., editors, *SIGIR*, SIGIR '10, pages 807–808, New York, NY, USA. ACM.

- Das, A. S., Datar, M., Garg, A., and Rajaram, S. (2007). Google news personalization: scalable online collaborative filtering. In *Proceedings of the 16th international conference on World Wide Web, WWW '07*, pages 271–280, New York, NY, USA. ACM.
- De Choudhury, M., Mason, W. A., Hofman, J. M., and Watts, D. J. (2010). Inferring relevant social networks from interpersonal communication. In *Proceedings of the 19th international conference on World wide web, WWW '10*, pages 301–310, New York, NY, USA. ACM.
- de Gemmis, M., Lops, P., Semeraro, G., and Basile, P. (2008). Integrating tags in a semantic content-based recommender. In *Proceedings of the 2008 ACM conference on Recommender systems, RecSys '08*, pages 163–170, New York, NY, USA. ACM.
- Demidova, E., Fankhauser, P., Zhou, X., and Nejdl, W. (2010). DivQ: diversification for keyword search over structured databases. In *Proceeding of the 33rd international ACM SIGIR conference on Research and development in information retrieval, SIGIR '10*, pages 331–338, New York, NY, USA. ACM.
- Deshpande, M. and Karypis, G. (2004). Item-based top-N recommendation algorithms. *ACM Trans. Inf. Syst.*, 22(1):143–177.
- Desrosiers, C. and Karypis, G. (2011). A comprehensive survey of neighborhood-based recommendation methods. In Ricci, F., Rokach, L., Shapira, B., Kantor, P. B., Ricci, F., Rokach, L., Shapira, B., and Kantor, P. B., editors, *Recommender Systems Handbook*, chapter 4, pages 107–144. Springer, Boston, MA.
- Diaz, F. (2007). Performance prediction using spatial autocorrelation. In *SIGIR '07: Proceedings of the 30th annual international ACM SIGIR conference on Research and development in information retrieval*, pages 583–590, New York, NY, USA. ACM.
- Diaz, F. and Jones, R. (2004). Using temporal profiles of queries for precision prediction. In *SIGIR '04: Proceedings of the 27th annual international conference on Research and development in information retrieval*, pages 18–24. ACM Press.
- Diederich, J. and Iofciu, T. (2006). Finding communities of practice from user profiles based on folksonomies. In Tomadaki, E., Scott, P. J., Tomadaki, E., and Scott, P. J., editors, *EC-TEL Workshops*, volume 213 of *CEUR Workshop Proceedings*. CEUR-WS.org.
- Dijkstra, E. W. (1959). A note on two problems in connexion with graphs. *Numerische Mathematik*, 1(1):269–271.
- Dror, G., Koenigstein, N., Koren, Y., and Weimer, M. (2012). The yahoo! music dataset and KDD-cup'11. *JMLR Workshop and Conference Proceedings*, 18:3–18.
- Duda, R. O., Hart, P. E., and Stork, D. G. (2001). *Pattern Classification (2nd Edition)*. Wiley-Interscience, 2 edition.
- Eirinaki, M., Vazirgiannis, M., and Varlamis, I. (2003). SEWeP: using site semantics and a taxonomy to enhance the web personalization process. In *KDD '03: Proceedings of the ninth ACM SIGKDD international conference on Knowledge discovery and data mining*, pages 99–108, New York, NY, USA. ACM Press.

- Elahi, M. (2011). Adaptive Active Learning in Recommender Systems. In Konstan, J., Conejo, R., Marzo, J., and Oliver, N., editors, *User Modeling, Adaption and Personalization*, volume 6787 of *Lecture Notes in Computer Science*, chapter 40, pages 414–417. Springer Berlin / Heidelberg, Berlin, Heidelberg.
- Endres, D. M. and Schindelin, J. E. (2003). A new metric for probability distributions. *Information Theory, IEEE Transactions on*, 49(7):1858–1860.
- Fernández, M., Vallet, D., and Castells, P. (2006a). Probabilistic Score Normalization for Rank Aggregation. In *28th European Conference on Information Retrieval (ECIR 2006)*, pages 553–556. Springer Verlag Lecture Notes in Computer Science, Vol. 3936.
- Fernández, M., Vallet, D., and Castells, P. (2006b). Using historical data to enhance rank aggregation. In *SIGIR '06: Proceedings of the 29th annual international ACM SIGIR conference on Research and development in information retrieval*, pages 643–644, New York, NY, USA. ACM.
- Filippone, M. and Sanguinetti, G. (2010). Information Theoretic Novelty Detection. *Pattern Recognition*, 43(3):805–814.
- Fleder, D. and Hosanagar, K. (2009). Blockbuster Culture’s Next Rise or Fall: The Impact of Recommender Systems on Sales Diversity. *Manage. Sci.*, 55:697–712.
- Foltz, P. W. and Dumais, S. T. (1992). Personalized information delivery: An analysis of information filtering methods. *Commun. ACM*, 35(12):51–60.
- Freeman, L. C. (1977). A set of measures of centrality based on betweenness. *Sociometry*, 40(1):35–41.
- Gantner, Z., Rendle, S., and Lars, S. T. (2010). Factorization models for context-/time-aware movie recommendations. In *Proceedings of the Workshop on Context-Aware Movie Recommendation*, CAMRa ’10, pages 14–19, New York, NY, USA. ACM.
- Ge, M., Battenfeld, C. D., and Jannach, D. (2010). Beyond accuracy: evaluating recommender systems by coverage and serendipity. In *Proceedings of the fourth ACM conference on Recommender systems*, RecSys ’10, pages 257–260, New York, NY, USA. ACM.
- Golbeck, J. (2006). Trust on the world wide web: A survey. *Foundations and Trends in Web Science*, 1(2):131–197.
- Golbeck, J. (2009). Trust and nuanced profile similarity in online social networks. *ACM Trans. Web*, 3(4):1–33.
- Golbeck, J. and Hendler, J. (2006). FilmTrust: movie recommendations using trust in web-based social networks. In *Consumer Communications and Networking Conference, 2006. CCNC 2006. 3rd IEEE*, pages 282–286.
- Goldberg, D., Nichols, D. A., Oki, B. M., and Terry, D. B. (1992). Using collaborative filtering to weave an information tapestry. *Commun. ACM*, 35(12):61–70.
- Goldberg, K., Roeder, T., Gupta, D., and Perkins, C. (2001). Eigentaste: A Constant Time Collaborative Filtering Algorithm. *Inf. Retr.*, 4(2):133–151.

- Grivolla, Jourlin, and Mori, D. (2005). Automatic classification of queries by expected retrieval performance. In *Predicting Query Difficulty - Methods and Applications, SIGIR 2005*.
- Gunawardana, A. and Meek, C. (2009). A unified approach to building hybrid recommender systems. In *Proceedings of the third ACM conference on Recommender systems, RecSys '09*, pages 117–124, New York, NY, USA. ACM.
- Gunawardana, A. and Shani, G. (2009). A Survey of Accuracy Evaluation Metrics of Recommendation Tasks. *J. Mach. Learn. Res.*, 10:2935–2962.
- Guo, G., Zhang, J., and Thalmann, D. (2012). A simple but effective method to incorporate trusted neighbors in recommender systems. In Masthoff, J., Mobasher, B., Desmarais, M. C., and Nkambou, R., editors, *User Modeling, Adaptation, and Personalization*, volume 7379 of *Lecture Notes in Computer Science*, pages 114–125, Berlin, Heidelberg. Springer Berlin / Heidelberg.
- Hauff, C. (2010). *Predicting the Effectiveness of Queries and Retrieval Systems*. PhD thesis, Univ. of Twente, Enschede.
- Hauff, C., Azzopardi, L., and Hiemstra, D. (2009). The Combination and Evaluation of Query Performance Prediction Methods. In Boughanem, M., Berrut, C., Mothe, J., Dupuy, C. S., Boughanem, M., Berrut, C., Mothe, J., and Dupuy, C. S., editors, *ECIR*, volume 5478 of *Lecture Notes in Computer Science*, pages 301–312. Springer.
- Hauff, C., Azzopardi, L., Hiemstra, D., and Jong, F. (2010). Query performance prediction: Evaluation contrasted with effectiveness. In Gurrin, C., He, Y., Kazai, G., Kruschwitz, U., Little, S., Roelleke, T., Rüger, S., and Rijsbergen, K., editors, *Advances in Information Retrieval*, volume 5993 of *Lecture Notes in Computer Science*, pages 204–216, Berlin, Heidelberg. Springer Berlin / Heidelberg.
- Hauff, C., Hiemstra, D., and de Jong, F. (2008a). A survey of pre-retrieval query performance predictors. In *CIKM '08: Proceeding of the 17th ACM conference on Information and knowledge management*, pages 1419–1420, New York, NY, USA. ACM.
- Hauff, C., Murdock, V., and Yates, R. B. (2008b). Improved query difficulty prediction for the web. In *Proceeding of the 17th ACM conference on Information and knowledge management, CIKM '08*, pages 439–448, New York, NY, USA. ACM.
- He, B. and Ounis, I. (2004). Inferring Query Performance Using Pre-retrieval Predictors. In *String Processing and Information Retrieval, SPIRE 2004*, pages 43–54.
- He, J., Larson, M., and de Rijke, M. (2008). Using Coherence-Based Measures to Predict Query Difficulty. In Macdonald, C., Ounis, I., Plachouras, V., Ruthven, I., and White, R. W., editors, *Advances in Information Retrieval*, volume 4956 of *Lecture Notes in Computer Science*, chapter 80, pages 689–694. Springer Berlin Heidelberg, Berlin, Heidelberg.

- Herlocker, J., Konstan, J. A., and Riedl, J. (2002). An Empirical Analysis of Design Choices in Neighborhood-Based Collaborative Filtering Algorithms. *Information Retrieval*, 5(4):287–310.
- Herlocker, J. L., Konstan, J. A., Borchers, A., and Riedl, J. (1999). An algorithmic framework for performing collaborative filtering. In *Proceedings of the 22nd annual international ACM SIGIR conference on Research and development in information retrieval*, SIGIR '99, pages 230–237, New York, NY, USA. ACM.
- Herlocker, J. L., Konstan, J. A., Terveen, L. G., and Riedl, J. T. (2004). Evaluating collaborative filtering recommender systems. *ACM Trans. Inf. Syst.*, 22(1):5–53.
- Hiemstra, D. (1998). A Linguistically Motivated Probabilistic Model of Information Retrieval. In *ECDL '98: Proceedings of the Second European Conference on Research and Advanced Technology for Digital Libraries*, pages 569–584, London, UK. Springer-Verlag.
- Hofmann, T. (2003). Collaborative filtering via gaussian probabilistic latent semantic analysis. In *SIGIR '03: Proceedings of the 26th annual international ACM SIGIR conference on Research and development in information retrieval*, pages 259–266, New York, NY, USA. ACM.
- Hofmann, T. (2004). Latent semantic models for collaborative filtering. *ACM Trans. Inf. Syst.*, 22(1):89–115.
- Hotho, A., Jäschke, R., Schmitz, C., and Stumme, G. (2006). Information Retrieval in Folksonomies: Search and Ranking. In Sure, Y. and Domingue, J., editors, *The Semantic Web: Research and Applications*, volume 4011 of *Lecture Notes in Computer Science*, chapter 31, pages 411–426. Springer Berlin / Heidelberg, Berlin, Heidelberg.
- Hu, Y., Koren, Y., and Volinsky, C. (2008). Collaborative Filtering for Implicit Feedback Datasets. In *Data Mining, 2008. ICDM '08. Eighth IEEE International Conference on*, volume 0, pages 263–272, Washington, DC, USA. IEEE.
- Huang, Z., Zeng, D. D., and Chen, H. (2006). A Unified Recommendation Framework Based on Probabilistic Relational Models. *Social Science Research Network Working Paper Series*.
- Hummel, S., Shtok, A., Raiber, F., Kurland, O., and Carmel, D. (2012). Clarity re-visited. In *Proceedings of the 35th international ACM SIGIR conference on Research and development in information retrieval*, SIGIR '12, pages 1039–1040, New York, NY, USA. ACM.
- Hwang, C.-S. and Chen, Y.-P. (2007). Using Trust in Collaborative Filtering Recommendation. In Okuno, H. and Ali, M., editors, *New Trends in Applied Artificial Intelligence*, volume 4570 of *Lecture Notes in Computer Science*, chapter 105, pages 1052–1060. Springer Berlin / Heidelberg, Berlin, Heidelberg.
- Jahrer, M., Töscher, A., and Legenstein, R. (2010). Combining predictions for accurate recommender systems. In *Proceedings of the 16th ACM SIGKDD international conference on Knowledge discovery and data mining*, KDD '10, pages 693–702, New York, NY, USA. ACM.

- Jamali, M. and Ester, M. (2009). Using a trust network to improve top-N recommendation. In *RecSys '09: Proceedings of the third ACM conference on Recommender systems*, pages 181–188, New York, NY, USA. ACM.
- Jambor, T. and Wang, J. (2010a). Goal-Driven Collaborative Filtering – A Directional Error Based Approach. In Gurrin, C., He, Y., Kazai, G., Kruschwitz, U., Little, S., Roelleke, T., Rüger, S., and Rijssbergen, K., editors, *Advances in Information Retrieval*, volume 5993, chapter 36, pages 407–419. Springer Berlin Heidelberg, Berlin, Heidelberg.
- Jambor, T. and Wang, J. (2010b). Optimizing multiple objectives in collaborative filtering. In *RecSys '10: Proceedings of the fourth ACM conference on Recommender systems*, pages 55–62, New York, NY, USA. ACM.
- Järvelin, K. and Kekäläinen, J. (2002). Cumulated gain-based evaluation of IR techniques. *ACM Trans. Inf. Syst.*, 20(4):422–446.
- Jawaheer, G., Szomszor, M., and Kostkova, P. (2010). Comparison of implicit and explicit feedback from an online music recommendation service. In *Proceedings of the 1st International Workshop on Information Heterogeneity and Fusion in Recommender Systems*, HetRec '10, pages 47–51, New York, NY, USA. ACM.
- Jensen, E. C., Beitzel, S. M., Grossman, D., Frieder, O., and Chowdhury, A. (2005). Predicting query difficulty on the web by learning visual clues. In *SIGIR '05: Proceedings of the 28th annual international ACM SIGIR conference on Research and development in information retrieval*, pages 615–616, New York, NY, USA. ACM.
- Jones, K. S. (1972). A statistical interpretation of term specificity and its application in retrieval. *Journal of Documentation*, 28(1):11–20.
- Jones, R. and Diaz, F. (2007). Temporal profiles of queries. *ACM Trans. Inf. Syst.*, 25(3).
- Kleinberg, J. M. (1999). Authoritative sources in a hyperlinked environment. *J. ACM*, 46(5):604–632.
- Kohavi, R., Longbotham, R., Sommerfield, D., and Henne, R. M. (2009). Controlled experiments on the web: survey and practical guide. *Data Min. Knowl. Discov.*, 18(1):140–181.
- Kohrs, A. and Merialdo, B. (1999). Clustering for Collaborative Filtering Applications. In *Computational Intelligence for Modelling, Control & Automation (CIMCA '99)*.
- Kompaoré, D., Mothe, J., Baccini, A., and Déjean, S. (2007). Prédiction du sri à utiliser en fonction des critères linguistiques de la requête. In *CORIA*, pages 239–254. Université de Saint-Étienne.
- Konstas, I., Stathopoulos, V., and Jose, J. M. (2009). On social networks and collaborative recommendation. In *Proceedings of the 32nd international ACM SIGIR conference on Research and development in information retrieval*, SIGIR '09, pages 195–202, New York, NY, USA. ACM.

- Koren, Y. (2008). Factorization meets the neighborhood: a multifaceted collaborative filtering model. In *Proceedings of the 14th ACM SIGKDD international conference on Knowledge discovery and data mining*, KDD '08, pages 426–434, New York, NY, USA. ACM.
- Koren, Y., Bell, R., and Volinsky, C. (2009). Matrix Factorization Techniques for Recommender Systems. *Computer*, 42(8):30–37.
- Koren, Y. and Bell, R. M. (2011). Advances in collaborative filtering. In Ricci, F., Rokach, L., Shapira, B., Kantor, P. B., Ricci, F., Rokach, L., Shapira, B., and Kantor, P. B., editors, *Recommender Systems Handbook*, chapter 5, pages 145–186. Springer, Boston, MA.
- Kossinets, G. and Watts, D. J. (2006). Empirical analysis of an evolving social network. *Science*, 311(5757):88–90.
- Kulkarni, A., Teevan, J., Svore, K. M., and Dumais, S. T. (2011). Understanding temporal query dynamics. In *Proceedings of the fourth ACM international conference on Web search and data mining*, WSDM '11, pages 167–176, New York, NY, USA. ACM.
- Kuncheva, L. I. (2004). *Combining Pattern Classifiers: Methods and Algorithms*. Wiley-Interscience.
- Kuncheva, L. I. and Whitaker, C. J. (2003). Measures of Diversity in Classifier Ensembles and Their Relationship with the Ensemble Accuracy. *Machine Learning*, 51(2):181–207.
- Kwok, K. L., Grunfeld, L., Sun, H. L., and Deng, P. (2004). TREC 2004 Robust Track Experiments Using PIRCS. In *Online Proceedings of 2004 Text REtrieval*.
- Kwon, K., Cho, J., and Park, Y. (2009). Multidimensional credibility model for neighbor selection in collaborative recommendation. *Expert Systems with Applications*, 36(3):7114–7122.
- Kwon, Y. (2008). Improving top-n recommendation techniques using rating variance. In *Proceedings of the 2008 ACM conference on Recommender systems*, RecSys '08, pages 307–310, New York, NY, USA. ACM.
- Lathia, N. (2010). *Evaluating Collaborative Filtering Over Time*. PhD thesis, University of London, Department of Computer Science, University College London.
- Lathia, N., Hailes, S., and Capra, L. (2008). kNN CF: a temporal social network. In *RecSys '08: Proceedings of the 2008 ACM Conference on Recommender Systems*, pages 227–234, New York, NY, USA. ACM.
- Lathia, N., Hailes, S., Capra, L., and Amatriain, X. (2010). Temporal diversity in recommender systems. In *SIGIR '10: Proceeding of the 33rd international ACM SIGIR conference on Research and development in information retrieval*, pages 210–217, New York, NY, USA. ACM.
- Lavrenko, V., Allan, J., Deguzman, E., Laflamme, D., Pollard, V., and Thomas, S. (2002). Relevance models for Topic Detection and Tracking. In *Human Language Technology 2002*, pages 104–110.

- Lee, D. H. and Brusilovsky, P. (2009). Reinforcing Recommendation Using Implicit Negative Feedback. In *Proceedings of the 17th International Conference on User Modeling, Adaptation, and Personalization: formerly UM and AH*, volume 5535 of *UMAP '09*, pages 422–427, Berlin, Heidelberg. Springer-Verlag.
- Lee, T., Park, Y., and Park, Y. (2008). A time-based approach to effective recommender systems using implicit feedback. *Expert Systems with Applications*, 34(4):3055–3062.
- Lieberman, H. (1995). Letizia: An agent that assists web browsing. In *IJCAI (1)*, pages 924–929. Morgan Kaufmann.
- Linden, G., Smith, B., and York, J. (2003). Amazon.com recommendations: item-to-item collaborative filtering. *IEEE Internet Computing*, 7(1):76–80.
- Liu, F. and Lee, H. J. (2010). Use of social network information to enhance collaborative filtering performance. *Expert Systems with Applications*, 37(7):4772–4778.
- Liu, K., Fang, B., and Zhang, W. (2010). Speak the same language with your friends: augmenting tag recommenders with social relations. In *Proceedings of the 21st ACM conference on Hypertext and hypermedia*, HT '10, pages 45–50, New York, NY, USA. ACM.
- Lops, P., de Gemmis, M., and Semeraro, G. (2011). Content-based recommender systems: State of the art and trends. In Ricci, F., Rokach, L., Shapira, B., Kantor, P. B., Ricci, F., Rokach, L., Shapira, B., and Kantor, P. B., editors, *Recommender Systems Handbook*, chapter 3, pages 73–105. Springer, Boston, MA.
- Ma, H., King, I., and Lyu, M. R. (2007). Effective missing data prediction for collaborative filtering. In *Proceedings of the 30th annual international ACM SIGIR conference on Research and development in information retrieval*, SIGIR '07, pages 39–46, New York, NY, USA. ACM.
- Ma, H., King, I., and Lyu, M. R. (2009). Learning to recommend with social trust ensemble. In *Proceedings of the 32nd international ACM SIGIR conference on Research and development in information retrieval*, SIGIR '09, pages 203–210, New York, NY, USA. ACM.
- Ma, H., Yang, H., Lyu, M. R., and King, I. (2008). SoRec: social recommendation using probabilistic matrix factorization. In *Proceedings of the 17th ACM conference on Information and knowledge management*, CIKM '08, pages 931–940, New York, NY, USA. ACM.
- Ma, H., Zhou, D., Liu, C., Lyu, M. R., and King, I. (2011). Recommender systems with social regularization. In *Proceedings of the fourth ACM international conference on Web search and data mining*, WSDM '11, pages 287–296, New York, NY, USA. ACM.
- Macdonald, C., He, B., and Ounis, I. (2005). Predicting Query Performance in Intranet Search. In *Predicting Query Difficulty - Methods and Applications*, SIGIR 2005.
- Magnini, B. and Strapparava, C. (2001). Improving user modelling with Content-Based techniques. In Bauer, M., Gmytrasiewicz, P. J., Vassileva, J., Bauer, M., Gmy-

- trasiewicz, P. J., and Vassileva, J., editors, *User Modeling*, volume 2109 of *Lecture Notes in Computer Science*, pages 74–83. Springer.
- Manning, C. D., Raghavan, P., and Schütze, H. (2008). *Introduction to information retrieval*. Cambridge University Press, 1 edition.
- Marlin, B. (2003). Modeling user rating profiles for collaborative filtering. In *In NIPS*17*.
- Marlin, B. M., Zemel, R. S., Roweis, S., and Slaney, M. (2007). Collaborative filtering and the missing at random assumption. In *Proc. of the 23rd Conference on Uncertainty in Artificial Intelligence*.
- Martinez, A., Arias, J., Vilas, A., Garcia, and Lopez (2009). What's on TV tonight? An efficient and effective personalized recommender system of TV programs. *Consumer Electronics, IEEE Transactions on*, 55(1):286–294.
- Marx, P., Thurau, T. H., and Marchand, A. (2010). Increasing consumers' understanding of recommender results: a preference-based hybrid algorithm with strong explanatory power. In *RecSys '10: Proceedings of the fourth ACM conference on Recommender systems*, pages 297–300, New York, NY, USA. ACM.
- Massa, P. and Avesani, P. (2004). Trust-Aware Collaborative Filtering for Recommender Systems. In Meersman, R. and Tari, Z., editors, *On the Move to Meaningful Internet Systems 2004: CoopIS, DOA, and ODBASE*, volume 3290 of *Lecture Notes in Computer Science*, chapter 31, pages 492–508. Springer Berlin / Heidelberg, Berlin, Heidelberg.
- Massa, P. and Avesani, P. (2007a). Trust-aware recommender systems. In *Proceedings of the 2007 ACM conference on Recommender systems*, RecSys '07, pages 17–24, New York, NY, USA. ACM.
- Massa, P. and Avesani, P. (2007b). Trust metrics on controversial users: balancing between tyranny of the majority and echo chambers. *International Journal on Semantic Web and Information Systems*.
- Massa, P. and Bhattacharjee, B. (2004). Using trust in recommender systems: An experimental analysis. In Jensen, C. D., Poslad, S., Dimitrakos, T., Jensen, C. D., Poslad, S., and Dimitrakos, T., editors, *iTrust*, volume 2995 of *Lecture Notes in Computer Science*, pages 221–235, Berlin, Heidelberg. Springer.
- McLaughlin, M. R. and Herlocker, J. L. (2004). A collaborative filtering algorithm and evaluation metric that accurately model the user experience. In *Proceedings of the 27th annual international ACM SIGIR conference on Research and development in information retrieval*, SIGIR '04, pages 329–336, New York, NY, USA. ACM.
- McNee, S. M., Riedl, J., and Konstan, J. A. (2006). Being accurate is not enough: how accuracy metrics have hurt recommender systems. In *CHI '06 extended abstracts on Human factors in computing systems*, CHI EA '06, pages 1097–1101, New York, NY, USA. ACM.

- Melucci, M. (2009). Weighted rank correlation in information retrieval evaluation. In Lee, G. G., Song, D., Lin, C. Y., Aizawa, A. N., Kuriyama, K., Yoshioka, M., Sakai, T., Lee, G. G., Song, D., Lin, C. Y., Aizawa, A. N., Kuriyama, K., Yoshioka, M., and Sakai, T., editors, *AIRS*, volume 5839 of *Lecture Notes in Computer Science*, pages 75–86. Springer.
- Michlmayr, E. and Cazer, S. (2007). Learning user profiles from tagging data and leveraging them for personal(ized) information access. In *Tagging and Metadata for Social Information Organization Workshop in conjunction with the 16th International World Wide Web Conference*.
- Milgram, S. (1967). The small world problem. *Psychology Today*, 1:61–67.
- Mooney, R. J. and Roy, L. (2000). Content-based book recommending using learning for text categorization. In *Proceedings of the fifth ACM conference on Digital libraries*, DL '00, pages 195–204, New York, NY, USA. ACM.
- Mothe, J. and Tanguy, L. (2005). Linguistic features to predict query difficulty. In *Predicting Query Difficulty - Methods and Applications*, SIGIR 2005.
- Newman, M. E. J. (2003). Ego-centered networks and the ripple effect. *Social Networks*, 25(1):83–95.
- Oard, D. and Kim, J. (1998). Implicit Feedback for Recommender Systems. In *in Proceedings of the AAAI Workshop on Recommender Systems*, pages 81–83.
- O'Connor, M. and Herlocker, J. (1999). Clustering Items for Collaborative Filtering. In *ACM SIGIR Workshop on Recommender Systems*.
- O'Donovan, J. and Smyth, B. (2005). Trust in recommender systems. In *Proceedings of the 10th international conference on Intelligent user interfaces*, IUI '05, pages 167–174, New York, NY, USA. ACM.
- O'Madadhain, J., Fisher, D., White, S., and Boey, Y. B. (2003). The JUNG (java universal Network/Graph) framework. Technical Report UCI-ICS 03-17, University of California.
- Onuma, K., Tong, H., and Faloutsos, C. (2009). TANGENT: a novel, 'Surprise me', recommendation algorithm. In *KDD '09: Proceedings of the 15th ACM SIGKDD international conference on Knowledge discovery and data mining*, pages 657–666, New York, NY, USA. ACM.
- Parra, D. and Amatriain, X. (2011). Walk the Talk. In Konstan, J. A., Conejo, R., Marzo, J. L., and Oliver, N., editors, *User Modeling, Adaption and Personalization*, volume 6787 of *Lecture Notes in Computer Science*, pages 255–268, Berlin, Heidelberg. Springer Berlin / Heidelberg.
- Pavlov, D., Manavoglu, E., Pennock, D. M., and Giles, C. L. (2004). Collaborative Filtering with Maximum Entropy. *IEEE Intelligent Systems*, 19(6):40–48.
- Pazzani, M. and Billsus, D. (1997). Learning and Revising User Profiles: The Identification of Interesting Web Sites. *Machine Learning*, 27(3):313–331.

- Pazzani, M. and Billsus, D. (2007). Content-Based Recommendation Systems The Adaptive Web. In Brusilovsky, P., Kobsa, A., and Nejdl, W., editors, *The Adaptive Web*, volume 4321 of *Lecture Notes in Computer Science*, chapter 10, pages 325–341. Springer Berlin / Heidelberg, Berlin, Heidelberg.
- Pazzani, M. J. (1999). A Framework for Collaborative, Content-Based and Demographic Filtering. *Artificial Intelligence Review*, 13(5):393–408.
- Pazzani, M. J., Muramatsu, J., and Billsus, D. (1996). Syskill & webert: Identifying interesting web sites. In Clancey, W. J., Weld, D. S., Clancey, W. J., and Weld, D. S., editors, *AAAI/LAAI, Vol. 1*, pages 54–61. AAAI Press / The MIT Press.
- Pérez Iglesias, J. (2012). *Predicción del rendimiento de consultas basado en rankings de documentos y nuevo marco de evaluación*. PhD thesis, Universidad Nacional de Educación a Distancia.
- Pérez-Iglesias, J. and Araujo, L. (2009). Ranking List Dispersion as a Query Performance Predictor. pages 371–374.
- Pérez-Iglesias, J. and Araujo, L. (2010). Evaluation of Query Performance Prediction Methods by Range. In Chavez, E. and Lonardi, S., editors, *String Processing and Information Retrieval*, volume 6393 of *Lecture Notes in Computer Science*, chapter 23, pages 225–236–236. Springer Berlin / Heidelberg, Berlin, Heidelberg.
- Plachouras, V., He, B., and Ounis, I. (2004). University of Glasgow at TREC 2004: Experiments in Web, Robust, and Terabyte Tracks with Terrier. In Voorhees, E. M., Buckland, L. P., Voorhees, E. M., and Buckland, L. P., editors, *TREC*, volume Special Publication 500-261. National Institute of Standards and Technology (NIST).
- Plachouras, V., Ounis, I., van Rijsbergen, C. J., and Cacheda, F. (2003). University of Glasgow at the Web Track: Dynamic Application of Hyperlink Analysis using the Query Scope. In *TREC*, pages 646–652.
- Ponte, J. M. and Croft, W. B. (1998). A language modeling approach to information retrieval. In *Proceedings of the 21st annual international ACM SIGIR conference on Research and development in information retrieval, SIGIR '98*, pages 275–281, New York, NY, USA. ACM.
- Pradel, B., Usunier, N., and Gallinari, P. (2012). Ranking with non-random missing ratings: influence of popularity and positivity on evaluation metrics. In *Proceedings of the sixth ACM conference on Recommender systems, RecSys '12*, pages 147–154, New York, NY, USA. ACM.
- Pu, P., Chen, L., and Hu, R. (2012). Evaluating recommender systems from the user's perspective: survey of the state of the art. *User Modeling and User-Adapted Interaction*, 22(4):317–355.
- Radlinski, F., Bennett, P. N., Carterette, B., and Joachims, T. (2009). Redundancy, diversity and interdependent document relevance. *SIGIR Forum*, 43(2):46–52.

- Radlinski, F., Kleinberg, R., and Joachims, T. (2008). Learning diverse rankings with multi-armed bandits. In *Proceedings of the 25th international conference on Machine learning*, ICML '08, pages 784–791, New York, NY, USA. ACM.
- Rafiei, D., Bharat, K., and Shukla, A. (2010). Diversifying web search results. In *Proceedings of the 19th international conference on World wide web*, WWW '10, pages 781–790, New York, NY, USA. ACM.
- Rafter, R., O'Mahony, M., Hurley, N., and Smyth, B. (2009). What Have the Neighbours Ever Done for Us? A Collaborative Filtering Perspective. In Houben, G.-J., McCalla, G., Pianesi, F., and Zancanaro, M., editors, *User Modeling, Adaptation, and Personalization*, volume 5535 of *Lecture Notes in Computer Science*, chapter 36, pages 355–360. Springer Berlin / Heidelberg, Berlin, Heidelberg.
- Renda, E. M. and Straccia, U. (2003). Web metasearch: rank vs. score based rank aggregation methods. In *SAC '03: Proceedings of the 2003 ACM symposium on Applied computing*, pages 841–846, New York, NY, USA. ACM Press.
- Rennie, J. D. M. and Srebro, N. (2005). Fast maximum margin matrix factorization for collaborative prediction. In *Proceedings of the 22nd international conference on Machine learning*, ICML '05, pages 713–719, New York, NY, USA. ACM.
- Resnick, P., Iacovou, N., Suchak, M., Bergstrom, P., and Riedl, J. (1994). GroupLens: An Open Architecture for Collaborative Filtering of Netnews. In *Proceedings of ACM 1994 Conference on Computer Supported Cooperative Work*, pages 175–186, Chapel Hill, North Carolina. ACM.
- Ricci, F., Rokach, L., and Shapira, B. (2011). Introduction to recommender systems handbook. In Ricci, F., Rokach, L., Shapira, B., Kantor, P. B., Ricci, F., Rokach, L., Shapira, B., and Kantor, P. B., editors, *Recommender Systems Handbook*, chapter 1, pages 1–35. Springer, Boston, MA.
- Rich, E. (1979). User modeling via stereotypes. *Cognitive Science*, 3:335–366.
- Roelleke, T. and Wang, J. (2008). TF-IDF uncovered: a study of theories and probabilities. In *Proceedings of the 31st annual international ACM SIGIR conference on Research and development in information retrieval*, SIGIR '08, pages 435–442, New York, NY, USA. ACM.
- Rojasattarat, E. and Soonthornphisaj, N. (2003). Hybrid Recommendation: Combining Content-Based Prediction and Collaborative Filtering. In *Intelligent Data Engineering and Automated Learning*, pages 337–344.
- Said, A., Berkovsky, S., and De Luca, E. W. (2010). Putting things in context: Challenge on Context-Aware movie recommendation. In *Proceedings of the Workshop on Context-Aware Movie Recommendation*, CAMRa '10, pages 2–6, New York, NY, USA. ACM.
- Said, A., Berkovsky, S., De Luca, E. W., and Hermanns, J. (2011). Challenge on context-aware movie recommendation: CAMRa2011. In *Proceedings of the fifth ACM*

- conference on Recommender systems*, RecSys '11, pages 385–386, New York, NY, USA. ACM.
- Salakhutdinov, R., Mnih, A., and Hinton, G. E. (2007). Restricted boltzmann machines for collaborative filtering. In Ghahramani, Z. and Ghahramani, Z., editors, *ICML*, volume 227 of *ACM International Conference Proceeding Series*, pages 791–798, New York, NY, USA. ACM.
- Salter, J. and Antonopoulos, N. (2006). CinemaScreen Recommender Agent: Combining Collaborative and Content-Based Filtering. *IEEE Intelligent Systems*, 21(1):35–41.
- Sarwar, B., Karypis, G., Konstan, J., and Riedl, J. (2001). Item-based collaborative filtering recommendation algorithms. In *Proceedings of the 10th international conference on World Wide Web*, WWW '01, pages 285–295, New York, NY, USA. ACM.
- Schein, A., Popescul, A., Ungar, L., and Pennock, D. (2002). Methods and metrics for cold-start recommendations. In *Proceedings of the 25th Annual International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR 2002)*, pages 253–260.
- Schein, A. I., Popescul, A., Ungar, L. H., and Pennock, D. M. (2001). Generative models for cold-start recommendations. In *Proceedings of the 2001 SIGIR Workshop on Recommender Systems*.
- Semeraro, G., Degennaris, M., Lops, P., and Basile, P. (2007). Combining learning and word sense disambiguation for intelligent user profiling. In Veloso, M. M. and Veloso, M. M., editors, *IJCAI*, pages 2856–2861.
- Shani, G. and Gunawardana, A. (2011). Evaluating Recommendation Systems. In Ricci, F., Rokach, L., Shapira, B., and Kantor, P. B., editors, *Recommender Systems Handbook*, chapter 8, pages 257–297. Springer US, Boston, MA.
- Shardanand, U. and Maes, P. (1995). Social information filtering: Algorithms for automating "word of mouth". In Katz, I. R., Mack, R. L., Marks, L., Rosson, M. B., Nielsen, J., Katz, I. R., Mack, R. L., Marks, L., Rosson, M. B., and Nielsen, J., editors, *CHI, CHI '95*, pages 210–217, New York, NY, USA. ACM/Addison-Wesley.
- Shepitsen, A., Gemmell, J., Mobasher, B., and Burke, R. (2008). Personalized Recommendation in Social Tagging Systems using Hierarchical Clustering. In *Proceedings of the 2008 ACM Conference on Recommender Systems (RecSys 2008)*, RecSys '08, pages 259–266, New York, NY, USA. ACM.
- Shtok, A., Kurland, O., and Carmel, D. (2009). Predicting query performance by Query-Drift estimation. In *Advances in Information Retrieval Theory*, pages 305–312.
- Shtok, A., Kurland, O., and Carmel, D. (2010). Using statistical decision theory and relevance models for query-performance prediction. In *Proceeding of the 33rd international ACM SIGIR conference on Research and development in information retrieval*, SIGIR '10, pages 259–266, New York, NY, USA. ACM.

- Snedecor, G. W. and Cochran, W. G. (1989). *Statistical Methods*. Iowa State University Press, 8 edition.
- Soboroff, I. (2004). On evaluating web search with very few relevant documents. In *Proceedings of the 27th annual international ACM SIGIR conference on Research and development in information retrieval*, SIGIR '04, pages 530–531, New York, NY, USA. ACM.
- Steck, H. (2011). Item popularity and recommendation accuracy. In *Proceedings of the fifth ACM conference on Recommender systems*, RecSys '11, pages 125–132, New York, NY, USA. ACM.
- Su, L. T. (1992). Evaluation measures for interactive information retrieval. *Information Processing & Management*, 28(4):503–516.
- Sun, A. and Bhowmick, S. S. (2009). Image tag clarity: in search of visual-representative tags for social images. In *Proceedings of the first SIGMM workshop on Social media*, WSM '09, pages 19–26, New York, NY, USA. ACM.
- Sun, A. and Datta, A. (2009). On stability, clarity, and co-occurrence of Self-Tagging. In Baeza Yates, R. A., Boldi, P., Ribeiro Neto, B. A., Cambazoglu, B. B., Baeza Yates, R. A., Boldi, P., Ribeiro Neto, B. A., and Cambazoglu, B. B., editors, *WSDM (Late Breaking-Results)*. ACM.
- Teevan, J., Dumais, S. T., and Liebling, D. J. (2008). To personalize or not to personalize: modeling queries with variation in user intent. In *SIGIR '08: Proceedings of the 31st annual international ACM SIGIR conference on Research and development in information retrieval*, pages 163–170, New York, NY, USA. ACM.
- Tomlinson, S. (2005). European ad hoc retrieval experiments with hummingbird SearchServer TM at. In *CLEF 2005. Working Notes for the CLEF 2005 Workshop*.
- Townsend, S. C., Zhou, Y., and Croft, B. W. (2004). A framework for selective query expansion. In Grossman, D., Gravano, L., Zhai, C., Herzog, O., Evans, D. A., Grossman, D., Gravano, L., Zhai, C., Herzog, O., and Evans, D. A., editors, *CIKM*, pages 236–237. ACM.
- van Rijsbergen, C. J. (1989). Towards an information logic. *SIGIR Forum*, 23(SI):77–86.
- van Setten, M. (2005). *Supporting people in finding information: hybrid recommender systems and goal-based structuring*. PhD thesis, University of Twente, Enschede.
- Vargas, S. and Castells, P. (2011). Rank and relevance in novelty and diversity metrics for recommender systems. In *Proceedings of the fifth ACM conference on Recommender systems*, RecSys '11, pages 109–116, New York, NY, USA. ACM.
- Vinay, V., Cox, I. J., Milic-Frayling, N., and Wood, K. (2006). On ranking the effectiveness of searches. In *SIGIR '06: Proceedings of the 29th annual international ACM SIGIR conference on Research and development in information retrieval*, pages 398–404, New York, NY, USA. ACM Press.
- Voorhees, E. M. (2002a). Overview of trec 2002. In *TREC*.

- Voorhees, E. M. (2002b). The philosophy of information retrieval evaluation evaluation of Cross-Language information retrieval systems. In Peters, C., Braschler, M., Gonzalo, J., and Kluck, M., editors, *Evaluation of Cross-Language Information Retrieval Systems*, volume 2406 of *Lecture Notes in Computer Science*, chapter 34, pages 143–170. Springer Berlin / Heidelberg, Berlin, Heidelberg.
- Voorhees, E. M. (2005a). Overview of the TREC 2004 robust retrieval track. In *Proceedings of the Thirteenth Text REtrieval Conference, TREC 2004*, pages 70–79.
- Voorhees, E. M. (2005b). The TREC robust retrieval track. *SIGIR Forum*, 39(1):11–20.
- Voorhees, E. M. (2006). The TREC 2005 robust track. *SIGIR Forum*, 40(1):41–48.
- Voorhees, E. M. and Harman, D. K., editors (2005). *TREC: Experiment And Evaluation in Information Retrieval*. MIT Press, Cambridge, MA.
- Walter, F. E., Battiston, S., and Schweitzer, F. (2009). Personalised and dynamic trust in social networks. In *Proceedings of the third ACM conference on Recommender systems, RecSys '09*, pages 197–204, New York, NY, USA. ACM.
- Wang, J. (2009). Language Models of Collaborative Filtering. In Lee, G. G., Song, D., Lin, C.-Y., Aizawa, A., Kuriyama, K., Yoshioka, M., and Sakai, T., editors, *Information Retrieval Technology*, volume 5839, chapter 19, pages 218–229. Springer Berlin Heidelberg, Berlin, Heidelberg.
- Wang, J., de Vries, A., and Reinders, M. (2006a). A User-Item Relevance Model for Log-Based Collaborative Filtering. In Lalmas, M., MacFarlane, A., Rüger, S., Tombros, A., Tsikrika, T., and Yavlinsky, A., editors, *Advances in Information Retrieval*, volume 3936 of *Lecture Notes in Computer Science*, chapter 5, pages 37–48–48. Springer Berlin / Heidelberg, Berlin, Heidelberg.
- Wang, J., de Vries, A. P., and Reinders, M. J. T. (2006b). Unifying user-based and item-based collaborative filtering approaches by similarity fusion. In *Proceedings of the 29th annual international ACM SIGIR conference on Research and development in information retrieval, SIGIR '06*, pages 501–508, New York, NY, USA. ACM.
- Wang, J., de Vries, A. P., and Reinders, M. J. T. (2008a). Unified relevance models for rating prediction in collaborative filtering. *ACM Trans. Inf. Syst.*, 26(3):1–42.
- Wang, J., Robertson, S., de Vries, A., and Reinders, M. (2008b). Probabilistic relevance ranking for collaborative filtering. *Information Retrieval*, 11(6):477–497.
- Wang, X., Fang, H., and Zhai, C. (2008c). A study of methods for negative relevance feedback. In *Proceedings of the 31st annual international ACM SIGIR conference on Research and development in information retrieval, SIGIR '08*, pages 219–226, New York, NY, USA. ACM.
- Watts, D. J. and Strogatz, S. H. (1998). Collective dynamics of 'small-world' networks. *Nature*, 393(6684):440–442.

- Weng, J., Miao, C., and Goh, A. (2006). Improving collaborative filtering with trust-based metrics. In Haddad, H. and Haddad, H., editors, *SAC*, pages 1860–1864, New York, NY, USA. ACM.
- Weng, L. T., Xu, Y., Li, Y., and Nayak, R. (2007). Improving Recommendation Novelty Based on Topic Taxonomy. *Web Intelligence and Intelligent Agent Technology, International Conference on*, 0:115–118.
- Xiang, L., Yuan, Q., Zhao, S., Chen, L., Zhang, X., Yang, Q., and Sun, J. (2010). Temporal recommendation on graphs via long- and short-term preference fusion. In *Proceedings of the 16th ACM SIGKDD international conference on Knowledge discovery and data mining*, KDD ’10, pages 723–732, New York, NY, USA. ACM.
- Xin, Y. and Steck, H. (2011). Multi-value probabilistic matrix factorization for IP-TV recommendations. In *Proceedings of the fifth ACM conference on Recommender systems*, RecSys ’11, pages 221–228, New York, NY, USA. ACM.
- Xue, G. R., Lin, C., Yang, Q., Xi, W., Zeng, H. J., Yu, Y., and Chen, Z. (2005). Scalable collaborative filtering using cluster-based smoothing. In *Proceedings of the 28th annual international ACM SIGIR conference on Research and development in information retrieval*, SIGIR ’05, pages 114–121, New York, NY, USA. ACM.
- Yao, Y. Y. (1995). Measuring retrieval effectiveness based on user preference of documents. *JASIS*, 46(2):133–145.
- Yilmaz, E., Aslam, J. A., and Robertson, S. (2008). A new rank correlation coefficient for information retrieval. In *Proceedings of the 31st annual international ACM SIGIR conference on Research and development in information retrieval*, SIGIR ’08, pages 587–594, New York, NY, USA. ACM.
- Yom-Tov, E., Fine, S., Carmel, D., and Darlow, A. (2005a). Learning to estimate query difficulty: including applications to missing content detection and distributed information retrieval. In *Proceedings of the 28th annual international ACM SIGIR conference on Research and development in information retrieval*, SIGIR ’05, pages 512–519, New York, NY, USA. ACM.
- Yom-Tov, E., Fine, S., Carmel, D., and Darlow, A. (2005b). Metasearch and Federation using Query Difficulty Prediction. In *Predicting Query Difficulty - Methods and Applications, SIGIR 2005*.
- Yu, K., Schwaighofer, A., Tresp, V., Ma, W. Y., and Zhang, H. (2003). Collaborative Ensemble Learning: Combining Collaborative and Content-Based Information Filtering via Hierarchical Bayes. In Meek, C., Kj, U., Meek, C., and Kj, U., editors, *UAI*, pages 616–623. Morgan Kaufmann.
- Zar, J. H. (1972). Significance testing of the spearman rank correlation coefficient. *Journal of the American Statistical Association*, 67(339):578–580.
- Zhang, M. and Hurley, N. (2008). Avoiding monotony: improving the diversity of recommendation lists. In *Proceedings of the 2008 ACM conference on Recommender systems*, RecSys ’08, pages 123–130, New York, NY, USA. ACM.

- Zhang, M. and Hurley, N. (2009). Statistical Modeling of Diversity in Top-N Recommender Systems. *Web Intelligence and Intelligent Agent Technology, IEEE/WIC/ACM International Conference on*, 1:490–497.
- Zhang, Y., Callan, J., and Minka, T. (2002). Novelty and redundancy detection in adaptive filtering. In *Proceedings of the 25th annual international ACM SIGIR conference on Research and development in information retrieval*, SIGIR '02, pages 81–88, New York, NY, USA. ACM.
- Zhao, Y., Scholer, F., and Tsegay, Y. (2008). Effective Pre-retrieval Query Performance Prediction Using Similarity and Variability Evidence. In Macdonald, C., Ounis, I., Plachouras, V., Ruthven, I., and White, R. W., editors, *Advances in Information Retrieval*, volume 4956 of *Lecture Notes in Computer Science*, chapter 8, pages 52–64. Springer Berlin Heidelberg, Berlin, Heidelberg.
- Zhou, T., Kuscsik, Z., Liu, J.-G., Medo, M., Wakeling, J. R., and Zhang, Y.-C. (2010). Solving the apparent diversity-accuracy dilemma of recommender systems. *Proceedings of the National Academy of Sciences*, 107(10):4511–4515.
- Zhou, Y. (2007). *Retrieval Performance Prediction and Document Quality*. PhD thesis, University of Massachusetts.
- Zhou, Y. and Croft, W. B. (2006). Ranking robustness: a novel framework to predict query performance. In *Proceedings of the 15th ACM international conference on Information and knowledge management*, CIKM '06, pages 567–574, New York, NY, USA. ACM.
- Zhou, Y. and Croft, W. B. (2007). Query performance prediction in web search environments. In *Proceedings of the 30th annual international ACM SIGIR conference on Research and development in information retrieval*, SIGIR '07, pages 543–550, New York, NY, USA. ACM.
- Ziegler, C. N. and Lausen, G. (2004). Analyzing correlation between trust and user similarity in online communities. In Jensen, C. D., Poslad, S., Dimitrakos, T., Jensen, C. D., Poslad, S., and Dimitrakos, T., editors, *iTrust*, volume 2995 of *Lecture Notes in Computer Science*, pages 251–265. Springer.
- Zimdars, A., Chickering, D. M., and Meek, C. (2001). Using Temporal Data for Making Recommendations. In *Proceedings of the 17th Conference in Uncertainty in Artificial Intelligence*, UAI '01, pages 580–588, San Francisco, CA, USA. Morgan Kaufmann Publishers Inc.
- Zitnick, C. L. and Kanade, T. (2004). Maximum entropy for collaborative filtering. In Chickering, D. M., Halpern, J. Y., Chickering, D. M., and Halpern, J. Y., editors, *UAI*. AUAI Press.