

Topic: Recommendation Systems (RS)

Themes:

- Discuss existing approaches to recommendation systems.
- Address some of the recommendation system issues (cold-start problems, sparsity, preference elicitation, computational considerations).

Reading list:

Item-centered RS

Content-based

1. Billsus, D. & Pazzani, M. (2000). *User Modeling for Adaptive News Access*. UMUAI, Special Issue on Deployed User Modeling Systems.

Similarity-based (??? metadata)

2. Bradley, K., Rafter, R. & Smyth B. (2000) *Case-Based User Profiling for Content Personalization*. In Proceedings of the International Conference on Adaptive Hypermedia and Adaptive Web-based Systems, (AH2000).

Utility-based

3. G. Linden, S. Hanks, and N. Lesh. (1997) *Interactive assessment of user preference models: The automated travel assistant*. UM.
4. Anthony Jameson, Ralph Sch afer, Joep Simons, and Thomas Weis. (1995) *Adaptive provision of evaluation-oriented information: Tasks and techniques*. IJCAI

Item ratings

5. B. M. Sarwar, G. Karypis, J. A. Konstan, and J. Riedl. (2001) *Item-based collaborative filtering recommendation algorithms*. In Proc. of the 10th International World Wide Web Conference (WWW10)

Knowledge based

6. Burke, R. (2001). *Knowledge based recommender systems*. Encyclopedia of Library and Information Science, 69.

User-centered RS

Classic systems

7. Goldberg, D., Nichols, D., Oki, B.M. and Terry, D. (1992) *Using Collaborative Filtering to Weave an Information Tapestry*. Communications of the ACM, 35, 12 (1992), pp. 61-70.

Memory-based

8. J. Herlocker, J. Konstan, A. Borchers, and J. Riedl. (1999) *An algorithmic framework for performing collaborative filtering*. SIGIR
9. Shardanand, Upendra & Pattie Maes. (1995) *Social Information Filtering: Algorithms for Automating Word of Mouth*. Proceedings of CHI

Clustering

10. L.H. Ungar, D. P. Foster (1998) *Clustering Methods For Collaborative Filtering*. Proceedings of the Workshop on Recommendation Systems

Model-based

11. John S. Breese, David Heckerman and Carl Kadie. (1998) *Empirical analysis of predictive algorithms for collaborative filtering*. In Proceedings of the Fourteenth Annual Conference on Uncertainty in Artificial Intelligence

Maybe: Demographic

12. Bruce Krulwich. (1997) *Lifestyle Finder: Intelligent user profiling using large-scale demographic data*. AI Magazine, 18(2):37--45, 1997

Navigation RS

13. Brusilovsky, P. (2001) *Adaptive hypermedia*. UMUAI
14. B. Mobasher, H. Dai, T. Luo, and M. Nakagawa (2002) *Discovery and Evaluation of Aggregate Usage Profiles for Web Personalization*. Data Mining and Knowledge Discovery
15. Hirashima, T., Hachiya, K., Kashihara, A. and Toyoda, J. I. (1997) *Information Filtering Using User's Context on Browsing in Hypertext*, UMUAI

Hybrid approaches

16. N. Good, J. Schafer, J. Konstan, A. Borchers, B. Sarwar, J. Herlocker, and J. Riedl. (1999) *Combining collaborative filtering with personal agents for better recommendations*. In Proceedings of the Sixteenth National Conference on Artificial Intelligence
17. Burke, R. (2002) *Hybrid Recommender Systems: Survey and Experiments*. User Modeling and User-Adapted Interaction
18. A. Schein, A. Popescul, L. Ungar, and D. Pennock. (2002) *Methods and metrics for cold-start recommendations*. SIGIR
19. Pazzani, M. (1999). *A Framework for Collaborative, Content-Based and Demographic Filtering*. Artificial Intelligence Review. 13(5-6) 393-408
20. Derry O'Sullivan, Barry Smyth, David C. Wilson, Kieran McDonald, Alan F. Smeaton (2004) *Improving the Quality of the Personalized Electronic Program Guide*. UMUAI

Issues in RS

Preference Elicitation and Control

21. Mark Claypool, Phong Le, Makoto Waseda and David Brown (2001) *Implicit Interest Indicators*. IUI
22. Rashid, A.M., Albert, I., Cosley, D., Lam, S.K., McNee, S.M., Konstan, J.A. and Riedl, J. (2002) *Getting to know you: Learning new user preferences in recommender systems*. IUI
23. Boi Faltings, Pearl Pu, Marc Torrens, Paolo Viappiani. (2004) *Designing example-critiquing interaction*. IUI
24. Annika Wærn (2004) *User Involvement in Automatic Filtering: An Experimental Study*. UMUAI

Computational considerations (high dimensionality)

25. K. Goldberg, T. Roeder, D. Gupta and C. Perkins (2001) *Eigentaste: A Constant Time Collaborative Filtering Algorithm*. Information Retrieval
26. D. Billsus and M. J. Pazzani. (1998) *Learning collaborative information filters*. In Proceedings of the Fifteenth International Conference on Machine Learning

Sparsity

27. Badrul M.Sarwar, Joseph A.Konstan, Al Borchers, Jon Herlocker, Brad Miller, and John Riedl. (1998) *Using filtering agents to improve prediction quality in the GroupLens research collaborative filtering system*. In Proceedings of the ACM Conference on Computer Supported Cooperative Work (CSCW)
28. Cohen, W., & Fan, W. (2000). *Web-collaborative filtering: Recommending music by crawling the web*. In Proceedings of WWW

Diversity

29. McGinty, L. and Smyth, B. (2003) *On the Role of Diversity in Conversational Recommender Systems*. In Proceedings of the Fifth International Conference on Case-Based Reasoning, (ICCB-03).