Reading List for SI 583 -- Recommender Systems
Winter 2009

Lecture 1: Introduction and Design Space (1/8)

Recommender Systems, Resnick and Varian, CACM 1997
http://portal.acm.org/citation.cfm?id=245121

Lecture 2 : Eliciting Ratings (1/13)

Slash(dot) and Burn: Distributed Moderation in a Large Online Conversation Space, Lampe and Resnick, Proceedings of CHI 2004 http://portal.acm.org/citation.cfm?doid=985692.985761

Optional Readings:

> Social Comparisons and Contributions to Online Communities, by Chen, Harper, Konstan, and Li, working paper 2007, publication forthcoming in the *American Economic Review*.

Lecture 3 : Implicit Feedback (1/15)

Information filtering based on user behavior analysis and best match text retrieval, Morita and Shinoda, Proceedings of ACM SIGIR 1994. **Read section 4 only!** http://portal.acm.org/citation.cfm?id=188583

Edit Wear and Read Wear, Hill, Hollan, Wroblewski and McCandless, ACM SIGCHI 2007.
http://portal.acm.org/citation.cfm?doid=142750.142751

Modeling Information Content Using Observable Behavior, Oard and Kim, Proceedings of ASIST 2001 (available for purchase online).

Lecture 4 Linear Algebra Techniques; Intro to User-User Algorithm (1/20)

SOS Math Online article on matrix algebra. Read up through the section on "Special Matrices".
http://www.sosmath.com/matrix/matrix.html

Mathworld article on covariance and correlation (for reference). http://mathworld.wolfram.com/Covariance.html

Lecture 5 : User-User Recommender Algorithm (1/22)

GroupLens: An Open Architecture for Collaborative Filtering of Netnews, Resnick, Iacovou, Suchak, Bergstrom, Riedl, in proceedings of CSCW'94. http://portal.acm.org/citation.cfm?id=192844.192905

Optional Readings:

> An Empirical Analysis of Design Choices in Neighborhood-Based Collaborative Filtering Algorithms, Herlocker, Konstan, and Riedl, Information Retrieval 5:287-310
> http://www.springerlink.com/content/j01519q72736726u
>
> Social information filtering: algorithms for automating word of mouth, Shardanand and Maes, in Proceedings of CHI'95. http://portal.acm.org/citation.cfm?id=223931
>
> Recommending and evaluating choices in a virtual community of use, Hill, Stead, Rosenstein, and Furnas, in Proceedings of CHI '95. http://portal.acm.org/citation.cfm?doid=223904.223929

Lecture 6: Some Applications, and Demo (1/27)

Electronic Commerce Recommendation Applications, Schafer, Konstan, and Riedl, in Journal of Data Mining and Knowledge Discovery. (See Table 1 on page 16 of the PDF download.)
http://www.springerlink.com/content/r24285574675qu7v/?p=c3148216b8a440d9afccead98921f5df&pi=1

Lecture 7: Case Study (1/29)

(Read this article after the class, to get a sense of what a consultant report should look like.) Sample Consultant Report on Message Recommending, by Paul Resnick.

Lecture 8: Item-Item Recommendations (2/3)

Amazon.com Recommendations: Item-to-Item Collaborative Filtering Linden, Smith, and York, IEEE Internet Computing, 7:76--80, 2002. http://ieeexplore.ieee.org/xpls/abs_all.jsp?tp=&arnumber=1167344&isnumber=26323

Optional Readings:

Mining Association Rules Between Sets of Items in Large Databases Agarwal, Imielinski, and Swami, Proceedings of ACM SIGMOD 1993 http://portal.acm.org/citation.cfm?id=170072

Lecture 9: PageRank; Other CF Algorithms (2/5)

The PageRank Citation Ranking: Bringing Order to the Web, Page, Brin, Motwani, and Winograd, Stanford Digital Libraries Technology Project. http://ilpubs.stanford.edu:8090/422/

Optional Readings:

> Netflix Update: Try This at Home, Simon Funk/B. Webb. For an implementation of this, see the Math::Preference::SVD Perl module on CPAN.org. http://sifter.org/%7Esimon/journal/20061211.html
>
> Application of Dimensionality Reduction in Recommender Systems, Sarwar, Karypis, Konstan, and Riedl, Proceedings of ACM WebKDD 2001. http://www.grouplens.org/papers/pdf/webKDD00.pdf

Lecture 10: Evaluation Metrics (2/10)

The Netflix Challenge prize rules. Read the "prize structure" section for the RMSE evaluation method.
http://www.netflixprize.com/assets/rules.pdf

Optional Readings:

> Wikipedia article on ROC curve and related concepts
> http://en.wikipedia.org/wiki/Receiver_operating_characteristic

Lecture 11: Explanations and Other Interface Extensions (2/12)

Making Recommendations Better: An Analytic Model of Human-Recommender Interaction, McNee, Riedl, and Konstan, Extended Abstract in Proceedings of ACM CHI 2006.
http://portal.acm.org/citation.cfm?id=1125451.1125660

A Survey of Explanations in Recommender Systems, Tintarev and Masthoff, 2007 IEEE Data Engineering Workshop http://www.ieeexplore.ieee.org/iel5/4400942/4400943/04401070.pdf

Is seeing believing? How recommender Systems Influence Users' Opinions, Cosley, Lam, Konstan, Albert, Riedl, Proceedings of CHI 2003. http://portal.acm.org/citation.cfm?id=642611.642713

Lecture 12: Scalable Software; Manipulation (2/17)

Shilling Recommender Systems for Fun and Profit, Lam and Riedl, Proceedings of WWW2004. http://portal.acm.org/citation.cfm?id=988672.988726

Optional Readings:

> Google news personalization: scalable online collaborative filtering, Das, Datar, Garg, and Rajaram, Proceedings of WWW2007. http://portal.acm.org/citation.cfm?id=1242572.1242610 *Don't worry if you can't follow all the math here -- try to understand the overall architecture.*

Lecture 13: Manipulation; Privacy (2/19)

Shilling Recommender Systems for Fun and Profit, Lam and Riedl, Proceedings of WWW2004. http://portal.acm.org/citation.cfm?id=988672.988726

The Influence Limiter: Provably Manipulation-Resistant Recommender Systems, Resnick and Sami, Proceedings of ACM RecSys 2007 http://portal.acm.org/citation.cfm?id=1297231.1297236

Optional Readings:

> Collaborative Filtering with Privacy via Factor Analysis, John Canny, Proceedings of SIGIR 2002. http://portal.acm.org/citation.cfm?id=564376.564419

Suggested further readings:

Toward the next generation of recommender systems: a survey of the state-of-the-art and possible extensions, survey paper by Adomavicius and Tuzhilin, IEEE Transactions on Knowledge and Data Engineering http://ieeexplore.ieee.org/xpls/abs_all.jsp?arnumber=1423975

The BellKor Solution to the Netflix Prize Bell, Koren, and Volinsky. (The winner of the first Progress Prize in the Netflix Challenge). http://www.research.att.com/%7Evolinsky/netflix/ProgressPrize2007BellKorSolution.pdf

Trust-aware collaborative filtering for Recommender Systems Massa and Avesani, in "On the move to meaningful internet systems 2004", Springer. http://www.springerlink.com/content/8baj2bp1hatvfgkc/