

2007 List of projects

1. Course Recommender System	.....	2
2. Generating Recommendation from CGM (Consumer Generated Media)	.....	3
3. Auction simulation framework	.....	4
4. Auction recommendation system	.....	5
5. Auction Visualization Framework	.....	6
6. Generating Recommendation and Visualization from talkbacks and forums	7
7. A self built news site	8

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1. Course Recommender System

1.1 Background

Recommender Systems (also known as feedback or reputation systems) are software applications that recommend on an object/item.

The basic idea is that online community members are given the ability to rate or provide feedback about their experiences / preferences with other community members. Feedback systems aim to build trust by aggregating such ratings of past behavior of their users and making them available to other users as predictors of future behaviour.

Example: the use of the system in amazon.com

1.2 This project

In this project students will develop an academic courses recommender system. The system will collect preferences from students and will provide recommendation to other students based on their previous course selection.

The system will interface with external data files to get course information data and (depends on availability) course schedules and prior students information.

1.3 Activities to be performed

1. Lean theory related to online auctions, and feedback/reputation/recommendation systems.
2. Design and develop the system.
3. Test the system with real data.
4. Analyze the information and optimize algorithms.
5. Demonstrate results.
6. Test the usability of the system and its effect on online users.
7. Finalize results.

1.4 Prerequisites

On the theoretical side:

Data Mining

Information Retrieval

On the practical side:

Web Development skills – PHP+MySQL, HTML/DHTML/CSS/Javascript

SQL

Data mining will be helpful but not mandatory

1.5 References

- Dellarocas, C.(2000). The design of reliable trust management system for electronic trading communities. Working paper, Sloan School of Management, Massachusetts Institute of Technology, Cambridge, MA.
- Dellarocas, C. (2003). The Digitization of Word of Mouth: Promise and Challenges of Online Feedback Mechanisms. *Management Science*, 49(10), 1407-1424.
- Resnick, P., and Varian, H. R. (1997). Recommender systems, *Communications of the ACM*, 40(3), 56-58.
- Resnick, P., and Zeckhauser, R. (2002). Trust among strangers in Internet transactions: Empirical analysis of eBay's reputation system. In M. R. Baye (Ed.), *The Economics of the Internet and E-Commerce. Advances in Applied Microeconomics, Vol. 11*. Greenwich, CT: JAI Press.
- Resnick, P., Zeckhauser, R., Friedman, E., and Kuwabara, K. (2000). Reputation systems. *Communications of the ACM*, 43(12), 45-48.
- Resnick, P., Zeckhauser, R., Swanson, J., and Lockwood, K. (2003). The value of reputation on eBay: a controlled experiment. Working paper. Retrieved May 9 from: <http://www.si.umich.edu/~presnick/papers/postcards/>

2. Generating Recommendation from CGM (Consumer Generated Media)

2.1 Background

Consumer generated media (CGM) originated as a reference to posts made by consumers within online venues such as internet forums, blogs, wikis, discussion lists etc., on products that they have purchased. Shoppers who are researching products often use other consumers' opinions when making buying decisions

2.2 This project

In this project students will develop a tool that will capture and analyze CGM and based on the data generate recommendations.

2.3 Activities to be performed

1. Learn theory related to online auctions, and feedback/reputation/recommendation systems.
2. Design and develop the system.
3. Test the system with real data.
4. Analyze the information and optimize algorithms.
5. Demonstrate results.
6. Test the usability of the system and its effect on online users.
7. Finalize results.

2.4 Prerequisites

On the theoretical side:

Data Mining

Information Retrieval

On the practical side:

Web Development skills – PHP+MySQL, HTML/DHTML/CSS/Javascript

SQL

Data mining will be helpful but not mandatory

2.5 References

<http://www.clickz.com/showPage.html?page=3515576>

<http://www.nielsenbuzzmetrics.com/>

http://marketiq.biz360.com/wp-content/uploads/2006/08/tech_sony_playstation3_analysis.pdf

http://ipr.wieck.com/files/uploads/PaineLark_05IPRRRC.pdf

3. Auction simulation framework

3.1 Background

The use of online auction mechanisms is emerging. We are interested in building an online auction framework that will enable to test new types of online auctions and bidding agents.

3.2 This project

In this project students will develop an online auction framework that will enable offline setting of various auction parameters (such as the auction model), the visual appearance of the auction site and more. It will also enable to incorporate beside human participants, bidding agents. The software will be composed of the following modules:

1. Client software – that will enable users to interact with the server.
2. Server application – that will perform and monitor the auction.
3. Bidding agents.
4. Auction site.

3.3 Activities to be performed

1. Learn theory related to online auctions.
2. Design and develop the system.
3. Test the usability of the system and its effect on online users.
4. Demonstrate results.
5. Finalize results.

3.4 Prerequisites

On the theoretical side:

Auction theories

On the practical side:

Web Development skills – PHP+MySQL, HTML/DHTML/CSS/Javascript
SQL

Data mining will be helpful but not mandatory

3.5 References

- Bapna, R., Goes, P., and Gupta, A. (2001a). Insights and analyses of online auctions. *Communications of the ACM*, 44(11), 42-50.
- Bapna, R., Goes, P., and Gupta, A. (2003a). Replicating Online Yankee Auctions to Analyze Auctioneers' and Bidders' Strategies. *Information Systems Research*, 14(3), 244-268.
- Kagel, J. H. (1995). Auctions: A Survey of Experimental Research. In J. H. Kagel and A. E. Roth (Eds.), *The Handbook of Experimental Economics*. Princeton, NJ:Princeton University Press
- Klein S. (1997). Introduction to Electronic Auctions. *EM - Electronic Markets*, 7(4), 3-6. Retrieved May 10, 2004 from: http://www.electronicmarkets.org/netacademy/publications.nsf/all_pk/260
- McAfee, R. P., and McMillan, J. (1987). Auctions and Bidding. *Journal of Economic Literature*, 25(2), 699-738.
- Milgrom, P. (1989). Auctions and Bidding: A Primer. *The journal of Economic Perspectives*, 3(3), 3-22.
- Milgrom, P. R., and Weber, R. J. (1982). A theory of auctions and competitive bidding. *Econometrica*, 50(5), 1089-1122.
- Rafaeli, S., Raban, D. Ravid, G. and Noy, A. (2003). Online Simulations in Management Education about Information and its Uses. In C. Wankel and R. Defillipi (Eds.), *Educating Managers with Tomorrow's Technologies A Volume in: Research in Management Education and Development*, Information Age Publishing. pp. 53-80.
- Turban, E. (1997). Auctions and Bidding on the Internet: An Assessment. *EM -Electronic Markets*, 7(4), 7-11. Retrieved Jan 21, 2002 from: <http://www.electronicmarkets.org/>

4. Auction recommendation system

4.1 Background

The use of online auction mechanisms is emerging. The opportunity to collect significant data from Internet auction sites and turn it into decision support information is rising.

4.2 This project

In this project students will develop a Web based application that will provide recommendation to auction sellers and buyer based on data collected in the auction site.

4.3 Activities to be performed

1. Learn theory related to online auctions, and feedback/reputation/recommendation systems.
2. Design and develop the system.
3. Test the system with real data.
4. Analyze the information and optimize algorithms.
5. Demonstrate results.
6. Test the usability of the system and its effect on online users.
7. Finalize results.

4.4 Prerequisites

On the theoretical side:

Data Mining

Artificial Intelligence basics

Information Retrieval

On the practical side:

Web Development skills - HTML/Java Script/PHP/MySQL

Data Bases

C/C++/Java programming

4.5 References

- Dellarocas, C.(2000). The design of reliable trust management system for electronic trading communities. Working paper, Sloan School of Management, Massachusetts Institute of Technology, Cambridge, MA.
- Dellarocas, C. (2003). The Digitization of Word of Mouth: Promise and Challenges of Online Feedback Mechanisms. *Management Science*, 49(10), 1407-1424.
- Resnick, P., and Varian, H. R. (1997). Recommender systems, *Communications of the ACM*, 40(3), 56-58.
- Resnick, P., and Zeckhauser, R. (2002). Trust among strangers in Internet transactions: Empirical analysis of eBay's reputation system. In M. R. Baye (Ed.), *The Economics of the Internet and E-Commerce. Advances in Applied Microeconomics, Vol. 11*. Greenwich, CT: JAI Press.
- Resnick, P., Zeckhauser, R., Friedman, E., and Kuwabara, K. (2000). Reputation systems. *Communications of the ACM*, 43(12), 45-48.
- Resnick, P., Zeckhauser, R., Swanson, J., and Lockwood, K. (2003). The value of reputation on eBay: a controlled experiment. Working paper. Retrieved May 9 from: <http://www.si.umich.edu/~presnick/papers/postcards/>
- Rafaeli, S. and Noy, A. (2005). Social Presence: Influence on Bidders in Internet Auctions. *EM-Electronic Markets*, 15(2), 158-175.
- Rafaeli, S. and Noy, A. (2002). Online auctions, messaging, communication and social facilitation: a simulation and experimental evidence, *European Journal of Information Systems*, 11(3), 196-207.

5. Auction Visualization Framework

5.1 Background

The use of online auction mechanisms is emerging. We are interested in building an online real-time visualization of the auction process.

5.2 This project

In this project students will develop an online visualization framework that will collect data from the auction and will provide visualization of the bidding processes.

5.3 Activities to be performed

1. Learn theory related to online auctions and interaction visualization
2. Select platform, development tools
3. Develop requirements, design and system code.
4. Test the usability of the system and its effect on online users.
5. Demonstrate results.
6. Finalize results.

5.4 Prerequisites

On the theoretical side:

Auction theories

On the practical side:

Web Development skills – PHP+MySQL, HTML/DHTML/CSS/Javascript

SQL

Data mining will be helpful but not mandatory

5.5 References

- Erickson, T., Halverson, C., Kellogg, W. A., Laff, M. and Wolf, T. (2002). Social Translucence: Designing Social Infrastructures that Make Collective Activity Visible. *Communications of the ACM (Special issue on Community, ed. J. Preece)*, 45(4), 40-44. Retrieved May 9, 2004 from: http://www.pliant.org/personal/Tom_Erickson/Soc_Infrastructures.html
- Erickson, T., and Kellogg, W. (2001). Social Translucence: Designing Systems that Support Social Processes. In J. Carroll (Ed.), *Human Computer Interaction in the New Millennium* Addison-Wesley, 2001.
- Erickson, T., and Kellogg, W. A. (2003a). Social Translucence: Using Minimalist Visualizations of Social Activity to Support Collective Interaction. In K. Höök, D. Benyon, and A. Munro (Eds.), *Designing Information Spaces: The Social Navigation Approach*, Springer, pp. 17-42. Retrieved May 9, 2004 from: http://www.pliant.org/personal/Tom_Erickson/SocialNavChapter.pdf
- Erickson, T. and Kellogg, W. A. (2003b). Knowledge Communities: Online Environments for Supporting Knowledge Management and its Social Context. *Sharing Expertise: Beyond Knowledge Management* (eds. Ackerman, Mark, Volkmar Pipek, and Volker Wulf). Cambridge, MA: The MIT Press, pp. 299-326. Retrieved May 9, 2004 from Klein S. (1997). Introduction to Electronic Auctions. *EM - Electronic Markets*, 7(4), 3-6. Retrieved May 10, 2004 from: http://www.electronicmarkets.org/netacademy/publications.nsf/all_pk/260
- McAfee, R. P., and McMillan, J. (1987). Auctions and Bidding. *Journal of Economic Literature*, 25(2), 699-738.
- Milgrom, P. (1989). Auctions and Bidding: A Primer. *The journal of Economic Perspectives*, 3(3), 3-22.
- Milgrom, P. R., and Weber, R. J. (1982). A theory of auctions and competitive bidding. *Econometrica*, 50(5), 1089-1122.
- Rafaeli, S., Raban, D. Ravid, G. and Noy, A. (2003). Online Simulations in Management Education about Information and its Uses. In C. Wankel and R. Defillipi (Eds.), *Educating Managers with Tomorrow's Technologies A Volume in: Research in Management Education and Development*, Information Age Publishing. pp. 53-80.

6. Generating Recommendation and Visualization from talkbacks and forums

6.1 Background

Consumer generated media (CGM) originated as a reference to posts made by consumers within online venues such as internet forums, blogs, wikis, discussion lists etc., on products that they have purchased. Shoppers who are researching products often use other consumers' opinions when making buying decisions

6.2 This project

In this project students will develop a system that will analyze blogs and talkbacks, build a visualization and will recommend on selected items..

6.3 Activities to be performed

1. Learn theory related to feedback/reputation/recommendation systems.
2. Design and develop the system.
3. Test the system with real data.
4. Analyze the information and optimize algorithms.
5. Demonstrate results.
6. Test the usability of the system and its effect on online users.
7. Finalize results.

6.4 Prerequisites

On the theoretical side:

Data Mining

Information Retrieval

On the practical side:

Web Development skills – PHP+MySQL, HTML/DHTML/CSS/Javascript

SQL

Data mining will be helpful but not mandatory

7. A self built news site

7.1 Background

Google news (<http://news.google.com/>) is using an autonomous tool for collecting news from various sites. This is one example of a site which use content created in other sites. We wish to explore the possibility to build a course reference site which will be updated by recent news, and articles related to the course.

7.2 This project

In this project students will develop a system that will analyze RSS feeds, blogs and articles will automatically build a site from the recommended items.

7.3 Activities to be performed

1. Learn theory related to feedback/reputation/recommendation systems.
2. Design and develop the system.
3. Test the system with real data.
4. Analyze the information and optimize algorithms.
5. Demonstrate results.
6. Test the usability of the system and its effect on online users.
7. Finalize results.

7.4 Prerequisites

On the theoretical side:

Data Mining

Information Retrieval

On the practical side:

Web Development skills – PHP+MySQL, HTML/DHTML/CSS/Javascript

SQL

Data mining will be helpful but not mandatory