SI 583 - Recommender Systems, Winter 2009

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Eliciting Ratings

SI583: Recommender Systems
Business Models

- How is the recommendation site supported?
Business Models

- How is the recommendation site supported?
  - Value-addition attached to a purchase/circulation etc. service
  - Advertisements
  - Paid for by content owners

- Related question: How are raters reimbursed/motivated?
Recap: Sources of information

- Explicit ratings on a numeric/5-star/3-star etc. scale
- Explicit binary ratings (like/dislike)
- Implicit information, e.g.,
  - who bookmarked/linked to the item?
  - how many times was it viewed?
  - how many units were sold?
  - how long did users read the page?
- Item descriptions/features
- User profiles/preferences
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This class: Eliciting Contribution of Ratings/Feedback

Goal: Get users to rate items, and rate the most useful items

- Learning goals:
  - What factors seem to matter
  - How these are identified
  - Design implications of these results.

- Two sets of studies:
  - Slashdot commenting
  - MovieLens research on movie rating contribution
Slashdot Recommendations [Lampe and Resnick]

http://www.slashdot.org/
Slashdot Recommendations [Lampe and Resnick]

- What are the recommended items?
- What explicit feedback input is used?
Evolution of Distributed Moderation

- Why?
  - Workload of the moderator (and delay)
  - Power of the moderator
Slashdot - moderation

Why? (Score:5, Insightful)
by Wind Walker (83965) on Friday March 26, @10:35AM (#8679865)
(http://slashdot.org/ [Last Journal: Sunday January 20, @01:33PM])

Forgive me for being so stupid, but what's the point of making a craft that can go Mach 7? The article claims travel benefits, going from New York to London in 2 hours. But honestly, traveling that fast, if anything went wrong you're toast. Turn a little bit to the wrong side, and suddenly you've lost a wing from the shock. No one flies at that.

The only possible use I can think of is that non-controlled planes armed with lethal cargo (nuclear or not) could be flown around the globe faster than any other means. The same could be said for missiles.

I'm all for "Science for Science's sake", I think this is worthless for any practical purposes.

[Reply to This] Normal

• Re: Why
• Re: Why
• Re: Why

Re: Why

by Hob (Score:1) Friday March 26, @10:47AM

Re: Why

by Hob (Score:1) Friday March 26, @10:47AM

92) on Friday March 26, @10:48AM (#8679993)

You kể toast as

Moderation interface

1) What are the chances of surviving initial impact into the ocean when the plane is in a 600 mile an hour vertical dive?
2) Do I really want to float around in the North Atlantic for several days, clinging to a pillow full of beer farts.

And yet, we still do this on a regular basis because guess what - it's actually fairly safe. As will hypersonic travel be, once we get around to getting better materials etc.

http://www.slashdot.org/
Slashdot – meta-moderation

Re: It's about time.
by - on Thursday March 18, @12:35PM (#2600400)
If the law were set up properly, you could sue a corporation and still deny it the rights of a person. Next.
"Cats think we are crazy because to them it looks like we put our fur on every morning" - G.G. Miller
Original Discussion: Microsoft and EU Talks End
Rating: Interesting.
This rating is Unfair ○ ○ ○ Fair | See Context

Re: Uh oh
by - on Sunday March 21, @10:30PM (#8630970)
I don't see you charging money for that?
Which is a key difference... There are iTunes skins for wondoe music players, and iPod skins as well... they don't go after them because they don't charge. (Of course there's always a good chance you're just trying to get some free linkage, but I'll give you the benefit of the doubt....)

That said, I wonder how WinPLOSION (formerly called WinExpose) has survived this long.
Original Discussion: Apple Quashes pBro
Rating: Informative.
This rating is Unfair ○ ○ ○ Fair | See Context

MacDailyNews?
by - on Sunday March 21, @10:56PM (#8631126)
What business does a Macintosh fan site have reporting on Windows viruses?
Bunch of children over there celebrating it.
Original Discussion: Nasty New Virus Variants
Rating: Insightful.
This rating is Unfair ○ ○ ○ Fair | See Context

http://www.slashdot.org/
The Workload is Distributed

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<th>Commented</th>
<th>Didn’t</th>
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<td>7,783</td>
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<tr>
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<td>23,670</td>
<td></td>
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<td>Time in minutes to reach a score $\leq 0$ $(n=28,277)$</td>
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</table>

Table 1: Time to reach benchmark scores.

Source: Undetermined
Unfair Moderations Often Not Reversed

Meta-moderation's agreement with fairness of moderation

Source: Undetermined
Final Scores Distribution

Source: Undetermined
Design Implications

- Useful “recommendations” can be very quickly be reached in a large community with similar norms
- Moderators exhibit selection biases which might cause “buried treasures”
- Significant contribution without any explicit incentive to contribute
Rating contribution on MovieLens

Would you rate movies? Why?

Welcome to MovieLens!
Free, personalized, non-commercial, ad-free, great movie recommendations. Have questions? Take the MovieLens Tour for answers. Not a member? Join MovieLens now.

Need a gift idea? Try MovieLens QuickPick!

New to MovieLens?
Join today!
You get great recommendations for movies while helping us do research.
Learn more:
- Try out QuickPick: Our Movie Gift Recommender
- Visit MovieLens Tour

Hello MovieLens Users!
Please log in:
Username/E-mail: [ ]
Password: [ ]
Save login: [ ]
Log into MovieLens

http://www.movielens.org/
Modelling users’ incentives to rate


- Potential reasons to rate:
  - Get better recommendations yourself
  - Rating fun
  - Non-rating fun (searching, browsing)
Methodology overview

- Use surveys and rating behavior measurements

- Find numeric “proxies” for qualitative ideas, e.g.,
  - a “fun score” derived from number of sessions per month, freq. of rating just-seen movies
  - a measure of “rareness of tastes”

- Construct a model that expresses overall benefit in terms of these attributes

  \[ \text{rating benefit} = a_1 \times \text{rec\_quality} + a_2 \times \text{fun\_score} + \ldots \]

- Regression: Find best-fitting coefficients to match reported/estimated benefit
Some results of the regression

- Entering additional ratings has a significant cost
- Rating benefits through recommendation quality are not significant
- Fun is a significant factor influencing rating volume
Insights for Eliciting Ratings

- Making rating more entertaining/less costly could be most useful.

- Users have different characteristics, so personalized interfaces might be helpful.
Impact of Social Information

- [Social Comparisons to Motivate Contributions to an Online Community, Harper, Lin, Chen, and Konstan]
- Starting point: how do users decide how much to rate?
- Social comparison theory asserts that decisions are often made by comparing to others
  - experimentally, making social norms visible can increase contributions
Experimental design

- An opt-in experiment on MovieLens
- Half the group gets a personalized email newsletter with social comparison information:
  “You have rated __ movies; compared to others who joined at the same time, you have rated [less/more/about the same]...”
- Other half, control group, gets non-social information
- Measure changes in rating behavior after newsletter
Experiment Results

- All three types in the experimental group rated more than the control group – especially the below-average group.

- This suggests that social information about ratings can influence users’ rating behavior.

- Surveys report that most subjects did not mind receiving comparison information.
Summary: Eliciting Ratings

- Fun/Intrinsic enjoyment often enough

- Social information useful

- Also potentially useful:
  - rewards in terms of a reputation, privilege, e.g. “karma points”
  - monetary rewards for contribution
    e.g., ePinions revenue shares