Recommender Systems: Interfaces and Technology

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The Problem: Overload
Recommenders

Tools to help identify worthwhile stuff

- Filtering interfaces
  - E-mail filters, clipping services
- Recommendation interfaces
  - Suggestion lists, “top-n,” offers and promotions
- Prediction interfaces
  - Evaluate candidates, predicted ratings

Goals

When you leave, you should …

- Understand recommender systems and their application
- Know enough about recommender systems technology to evaluate application ideas
- Be able to design and critique recommender application designs
- See where recommender systems have been, and where they are going
Outline

Introduction
Recommender Systems Application Space
MovieLens Case Study
Recommender Algorithms
Eight Principles and Case Studies
Designing Recommender Applications
Privacy Issues
Commercial Tool Survey

Who are We?

John Riedl
  Collaborative and distributed systems
Joe Konstan
  Human-computer interaction

GroupLens Research
Net Perceptions
Word of Mouse
Mitchell’s Calendar Apprentice

- Learns rules of how to schedule
- Takes over as confidence and user permit

Effective Interrogation

- Value-of-information analysis
- Which items to ask about?
  - High popularity? High Entropy?
  - Value to individual? Value to Community?
  - System-Driven? User-Driven?
Principles Learned

Be a Customer Agent
- Listen, Learn, and Use
- Anticipate Pitfalls
- Bring “Inside” Opportunities and Info
- Make the Match

Box Products, Not People
- Individuals, not Demographics
- Evolving Personalization
- Real-Time Updates

Privacy Issues

Same as E-commerce, plus
- Extra sensitivity of profile data
  → E.g., Tacit’s dual profiles

Honesty/openness vs. edited content
Figure 1. A screen dump from the on-line grocery store.
Filterbots Apart

Slashdot article about Geocities

Yahoo/Geocities IP Trouble

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GroupLens Research
Use Communities to Create Content
- Editorial process is value added
- Free is better than paying for it
  - customers trust what they produce
- Help customers find interesting information from other customers

Turn Communities Into Content
- Help customers find interesting other people
- Encourage interaction
- Your customers may be the most interesting thing about you
Recommendations Unplugged

Experimental questions
- How do users interact?
- What usage patterns?
- What happens as users gain experience?
- How do different modalities compare?
- How does usage compare with web?

Discussion