

Applications of Content-based RS

- Sina.com
- toutiao.com

Key Ideas

- **Model items by relevant item attributes**
- **Models user preferences by attributes**
- **The same attribute space for **items** and **user preferences****
- **Recommendation based on the similarity between items and user preferences**

Basic Assumption: Stable Preference

- **Content: the description of items**
- **Stable preference: long-term interests**
 - **News, reading**
 - **Clothing**
 - **Movies**
 - **Hotels**
- **Content based recommendation**
 - **A kind of personalized recommendation**
 - **But not based on collaborative information**

Case Study of CRS 1: Book Recommendation

- Item Description

Title	Genre	Author	Type	Price	Keywords
<i>The Night of the Gun</i>	Memoir	David Carr	Paperback	29.90	press and journalism, drug addiction, personal memoirs, New York
<i>The Lace Reader</i>	Fiction, Mystery	Brunonia Barry	Hardcover	49.90	American contemporary fiction, detective, historical
<i>Into the Fire</i>	Romance, Suspense	Suzanne Brockmann	Hardcover	45.90	American fiction, murder, neo-Nazism
...					

Case Study of CRS 1: Book Recommendation

- User Profile

Title	Genre	Author	Type	Price	Keywords
...	Fiction, Suspense	Brunonia Barry, Ken Follett	Paperback	25.65	detective, murder, New York

- Similarity

Case Study of CRS 1: Book Recommendation

- Attrite types
 - Enumeration
 - Real values

Case Study of CRS 2: News Recommendation

- **Krakatoa Chronicle: the First Content-based Recommender**
- <http://www.w3.org/Conferences/WWW4/Papers/93>
 - Kamba, Bharat, and Albers (WWW '95)

Document URL: http://honeypark.cc.gatech.edu:8080/cgi-bin/oldIDNews.pl?Read=Read+Last+Edition+of+Krakatoa+Chronicle

Tuesday, April 26, 1995

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Krakatoa Chronicle

density

dense

tendency

general

sensitivty

not very sensitive

P: Peek an article, S: Save an article to a scrapbook

Technical static fuzzes Europe's telecom networks

(c) 1995 The News & Observer Publishing Co.
(c) 1995 Bloomberg Business News

PARIS, April 26 (04-25-95) — With today's modems and telephone networks, sending data via telephone from a conference in Germany to your London office should be child's play, right?

Wrong.

Electric plugs differ from place to place. So do telephone connectors,

dial tones and the latest transmission standards. As business travelers can attest, a thicket of technical, regulatory and other hurdles must be cleared before Europe becomes a "plug-and-play" \$160 billion telecommunications market, as promised, by 1996.

It will have to be in place before doctors in Belgium and Germany

 Interesting

Rogers executives resign as officers of Unitel Communications

(c) 1995 The News & Observer Publishing Co.
(c) 1995 Bloomberg Business News

Toronto, April 26 (04-25-95) — Rogers Communications Inc., which spurned a majority stake in long-distance telephone company Unitel Communications Inc., said three of its executives resigned as officers and directors of Unitel.

The executives who resigned are Joe Rogers, Paul Lind and David Gergacz.

 No Comment

Rogers, who is president and chief executive of the cable-television operator, was Unitel's chairman, a post he had held since mid-January. Lind and Gergacz served as vice chairmen of Unitel.

Last week, Rogers Communications said it wouldn't exercise an option to buy a majority stake in Unitel. Toronto-based Rogers acquired the option in January from

President will buy Wang stake and invest in a Shanghai plant

(c) 1995 The News & Observer Publishing Co.
(c) 1995 Bloomberg Business News

TAIPEI, April 26 (04-25-95) — President Technology Inc., a Taiwan computer maker and

software services concern, said it purchased the 49% of a Taiwan software concern it didn't already own from Lowell, Mass.-based Wang Laboratories Inc. for NT\$365

million (\$14.4 million).

The company, 19% owned by Taiwan food processor President Enterprises Corp. (1216 TT), also said it plans to invest NT\$100 mil-

lion in a computer monitor plant in Shanghai this year and double its capital to NT\$1.5 billion.

President Technology purchased

 No Comment

R.R. Donnelley unit completes merger with Corporate Software

(c) 1995 The News & Observer Publishing Co.
(c) 1995 Bloomberg Business News

Chicago, April 24 (04-24-95) —

R.R. Donnelley & Sons said it has completed the merger of its

 Interesting

Creative Technology, Aztech expand share of sound card market

(c) 1995 The News & Observer Publishing Co.
(c) 1995 Bloomberg Business News

Singapore, April 25 (04-24-95) —

Creative Technology Ltd. and Aztech Systems Ltd. both expanded

 Interesting


Case Study of CRS 2: News Recommendation

- **Attribute space**
 - **Word vocabulary**
- **How to represent an article**
- **How to represent a user**

How to Build User Preferences

- **Ratings**
 - **Implicit: actions of read, buy, click, save**
 - **Explicit: ratings**
- **We could simply count the number of times the user likes (or dislikes) items with each keyword**

How to Use User Preferences

- **Given a vector of keyword preferences**
 - **Do we just add up likes and dislikes?**
 - **Can we figure out which keywords are more and less relevant?**
- **Word weighting: TFIDF**

Challenges and Drawbacks

- **Content-Based Techniques in general ...**
 - **Depend on well-structured attributes that align with preferences**
 - Hard to get these attributes, e.g. paintings, poems
 - **Unlikely to find surprising connections**
 - **Harder to find complements than substitutes**

