

Steps for Content Based Recommender Systems

What is the content?

- Most CB-recommendation techniques were applied to recommending text documents
 - Like web pages or news articles
 - Basic Assumption: Availability of item description/information
- Content of items is usually represented as text
 - With textual descriptions of their basic characteristics.
 - Structured: Each item is described by the same set of attributes
 - Unstructured: free-text description.

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

Item Content Representation

- **What do we need:**
 - some information about the available items such as the genre ("content")
 - some sort of *user profile* describing what the user likes (the preferences)

	Comedy	Adventure	Superhero	Sci-Fi	
	0	1	1	0	
	1	1	1	1	
	1	0	1	0	
Movies					

From Items to User Profiles



1



5



4



Input User Ratings

Comedy

Adventure

Superhero

Sci-Fi

0

1

1

0



1

1

1

1



1

0

1

0



Movies Matrix

From Items to User Profiles

	
	1
	5
	4



Input User Ratings

X


	Comedy	Adventure	Superhero	Sci-Fi
	0	1	1	0
	1	1	1	1
	1	0	1	0

Movies Matrix

=

	Comedy	Adventure	Superhero	Sci-Fi
	0	1	1	0
	5	5	5	5
	4	0	4	0

User Profile

	Comedy	Adventure	Superhero	Sci-Fi
	9	6	10	5

From Items to User Profiles

	
	1
	5
	4




Input User Ratings

X


	Comedy	Adventure	Superhero	Sci-Fi
	0	1	1	0
	1	1	1	1
	1	0	1	0

Movies Matrix

=

	Comedy	Adventure	Superhero	Sci-Fi
	0	1	1	0
	5	5	5	5
	4	0	4	0

User Profile


	Comedy	Adventure	Superhero	Sci-Fi
	0.3	0.2	0.33	0.16

Recommending Items



	Comedy	Adventure	Superhero	Sci-Fi	
	1	1	0	1	
	0	0	1	0	
	1	0	1	0	

Movies Matrix




	Comedy	Adventure	Superhero	Sci-Fi
	0.3	0.2	0.33	0.16

X

X

X

X

	Comedy	Adventure	Superhero	Sci-Fi
	1	1	0	1
	0	0	1	0
	1	0	1	0

Movies
Matrix

=

	Comedy	Adventure	Superhero	Sci-Fi
	0.3	0.2	0	0.16
	0	0	0.33	0
	0.3	0	0.33	0

Weight Matrix

SUM

	Sum
	0.66
	0.33
	0.63