RECOMMENDATION ENGINES

MASTER IN BUSINESS ANALYTICS AND BIG DATA

ABOUT THIS COURSE... (I/II)

- Session 1, Introduction to Recommendation Engines
- Session 2, Recommendation Methods

- Session 3, Collaborative Filtering
- Session 4, **Recommendation Engine Labs (Part 1)**

- Session 5, Content-based Filtering and Hybrid Approaches
- Session 6, **Recommendation Engine Labs (Part 2)**

- Session 7, Building a Recommendation Engine in the Real World
- Session 8, **Recommendation Engine Labs (Part 3)**

- Session 9 & 10, **Final Project Evaluation**

SESSION 4,

RECOMMENDATION ENGINE LAB (PART 1)

- Building a Non Personalised Recommendation Engine
- Building a Collaborative Filtering Engine

RECOMMENDATION ENGINE LAB (PART 1)

1. Collect Data

- **Category**: movies
- **Type**: explicit, multi-level ratings
- **Format**: csv
- **Size**: 20x20 matrix

User	260: Star War	1210: Star Wa	356: Forrest G	318: Shawsha	593: Silence o	3
755: John	1	5	2		4	
5277: Maria	5	3		2	4	
1577: Anton				5	2	
4388: Roger		3				
1202: Martina	4	3	4	1	4	
3823: Ana	2	4	4	4		
5448: Sergi			3	1	1	
5347: Marc	4				3	
4117: Jim	5	1		4	2	
2765: Chris	4	2		5	3	
5450: Bernard	2	1	5			
139: Nuria	3	5	2		2	
1940: Nerea	2	3		5	4	
3118: Carles	3		3		2	
4656: Victoria	4	4			5	
4796: Ivan			1		3	
6037: Rachel					4	
3048: Nadia	4	5	1	5	1	
4790: Oriol	5	1				
4489: Valery	1	2	2	4	5	

RECOMMENDATION ENGINE LAB (PART 1)

2. Build a Non Personalised Recommendation Engine

- **Mean rating**. Return the average rating per each movie, in descending order.
- **Top percentage**. Return the top percentage of movies equal or greater than a specific rating, in descending order.
- **Rating count**. Return the total number of ratings per each movie, in descending order.
- **People who watched x also watched y**. Return the top n movies that are related to a specific one. Calculate movies that most often occur with other movie.
- **People who liked x also liked y**. Return the top n movies that are related to a specific one. Calculate movies that are most often liked with other movie.
- **Movielens**. Explore movielens real data set.

RECOMMENDATION ENGINE LAB (PART 1)

3. Build a Collaborative Filtering Engine

- **Pearson correlation coefficient**. Given two persons calculate the similarity distance using this weight formula.
- **Critics comparison.** Show the movie ratings for two persons on a scatter plot. How is this compared to other critics? What it means?
- **Movies recommendation**. Return all the recommendations for a given user, using the Pearson correlation.
- **Top n similar users.** Return the top n similar users to a given user, using the Pearson correlation.

RECOMMENDATION ENGINE LAB (PART 1)

EVALUATION			EXAMPLE
	Correct results	50 %	7
	Clean, documented and executable code	40 %	10
	Code efficiency	10 %	2
Homework Delivery		**FINAL SCORE**	7,7

Accepted programming languages: R
Accepted delivery: R Markdown file
Recommended IDE: R Studio