IR: Information Retrieval
FIB, Master in Innovation and Research in Informatics

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http://www.cs.upc.edu/~ir-miri
Instructors

- Ramon Ferrer-i-Cancho (lectures + exercises + lab)
  - rferrericancho@cs.upc.edu
  - Omega S124, 93 413 4028

Instructor(s) of previous edition
- Marta Arias
  - marias@cs.upc.edu
  - Omega 322, 93 413 7858
Class Logistics

Theory + problems: weekly.

- Tuesdays, 10–11, A5S108
- Fridays, 12–14, A6203
- Problem list proposed weekly
- To be handed 1 week later

Labs / tutoring, 2 hours every 2 weeks approx (tentative plan).

- Tuesdays, 8–10, A5S113
- Some extra work, 2 hours on average per session Report to be handed 2 weeks later
- A total of 6 sessions, on dates: schedule in progress

\(^1\) Dates may be subjected to change; if so it will be appropriately announced in advance through the racó
Evaluation I

- Exercises: Collected in exercise sessions. 25%
- Lab work: Weighted average of report grades. 25%
- Exam, January, date to be announced: 30%
- Presentation of a paper (late December or early January, to be determined): 20%

Lab work and exercises will be scored on a 4-point scale:
- 0 - not really tried
- 1 - tried, but with major flaws
- 2 - main ideas correct, but incomplete or some insight missing
- 3 - basically ok (normally here if some silly numerical error - not systematic errors).
Evaluation II
About exercise and lab assignments

▶ To be solved in teams of two people
▶ You should team with at least 3 different people during the course, i.e., rotate partners as much as you can
▶ We can make reasoned exceptions, but tell us in advance
▶ Post solution through the “racó” (one team member is enough, but please state authors clearly in your delivered document)
Contents I

First half:

- **Core Information Retrieval:**
  - Introduction: Concept. The IR process
  - Information Retrieval Models
  - Indexing and Searching, Implementation
  - Information Retrieval Evaluation, Feedback Models

- **Web Search:**
  - Link analysis: Page Rank
  - Crawling the web
  - Architecture of a Web search system
Contents II

Second half:

- The “Big Data” Slogan
  - Architecture of large-scale web search systems
  - The Map-Reduce paradigm
  - Introduction to NoSQL databases
  - The Apache ecosystem for web search.

- Social Network Analysis:
  - Characterizing of real complex networks
  - Communities, influence, information diffusion

- Clustering and Locality Sensitive Hashing

- Recommender Systems
Bibliography

- Russell, Matthew, Mining the Social Web: Analyzing Data from Facebook, Twitter, LinkedIn, and Other Social Media Sites. O'Reilly, 2011
- ... There's a whole web out there