Introduction to the Text Analytics course

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Hello!

Teacher of this course: Andrea Esuli

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Text Analytics course

Course code: 635AA - 6 CFU - First semester
Master programme in Data Science and Business Informatics (WDS-LM).
Mutuated by the Master programme in Digital humanities (WFU)

Course home page

Lessons 2020/21:

9 - 11 Wednesday - Microsoft Teams
9 - 11 Thursday - Microsoft Teams

Office hours:

by appointment (send email) - Microsoft Teams/Skype (aesuli)
Disciplinary background: Natural Language Processing, Information Retrieval and Machine Learning

- Mathematical background: Probability, Statistics and Algebra
- Linguistic essentials: words, lemmas, morphology, PoS, syntax
- Basic text processing: regular expression, tokenization
- Data gathering: data collection, twitter API, scraping, dataset annotation
- Basic modelling: collocations, language models
- Statistical Machine Learning for text analytics
- Deep/Neural Machine Learning for text analytics
- Libraries and tools: NLTK, Spacy, scikit-learn, Tensorflow/Keras, Pytorch
- Applications: Classification, Clustering, Regression, Language Modeling, Sentiment Analysis, Opinion Mining, Information Extraction...
Tentative calendar

First two weeks: Introduction to course, probability and python.

October: From strings to NLP and text analytics, statistical ML.

November: From Statistical ML to Deep/Neural ML, Neural Language Models.

December: Advanced applications.
Textbooks


Further readings:

Other material

A substantial part of slides are derived from the previous editions of the course held by Professor Giuseppe Attardi.

Green text (and sometimes also images) in slides are hyperlinks to additional info that enriches the discussion of the topic (papers, news, websites, tools).

Python notebooks will provide practical examples of the presented topics.
Exam: project

PROJECT: Take a Text Analytics task and implement, test, and discuss, a solution for it.

- Pick your task from: a challenge (SEMEVAL, EVALITA, Kaggle), a research paper, propose your own.

- **We will agree on the idea before you start working on the project.**

- Submission is code + paper reporting on the activity (4-10 pages)
  - I'll show you examples of projects from previous years during the course.

- Oral exam is a discussion of your project.

- Groups: **max 3 persons**. I suggest working in pairs, mixing skills.