General information on the projects

The project aim is to demonstrate skills on NLP techniques, and to answer business-relevant questions. The questions can be chosen from the proposed list, or can be invented by the students. The project can use the approaches explained in class, but students are warmly encouraged to explore other NLP techniques, using python or other languages. Some examples of possible techniques are:

- Keyword Extraction
- Document Similarity
- NER
- Word Clustering & Topic Modeling: https://spacy.io/universe/project/tmtoolkit
- Sentiment Analysis: e.g. https://spacy.io/universe/project/spacy-textblob
- ….

Let's pretend that you are a startup, or you work for a company in the fields of interest. THe list of fields is available **here**.You will have at your disposal some data-set, available at this link. You are free to collect more data from the web.

Logistic information

Projects should be done in teams (2-3 persons), or a single student.

The output of the project is a 6-12 pages pdf describing the process you used and the results you get, following this structure:

- Section 1: Introduction on the goal of the project and research question
- Section 2: Description of the process
- Section 3: Discussion on the results

The project has to be sent the day of the written exams.

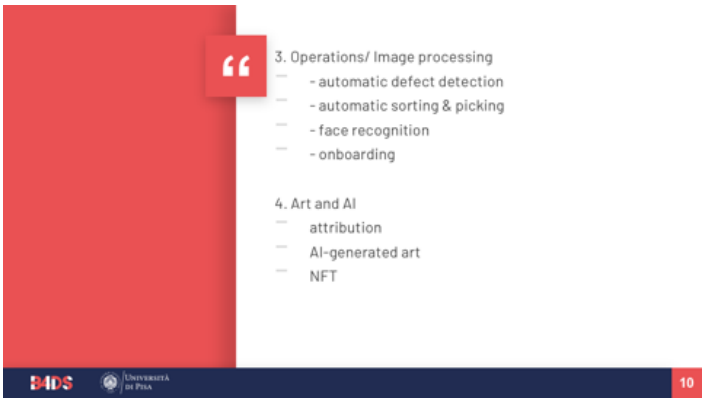
Also, students have to prepare a 15 minutes presentation, to show the content of the project document. This presentation will be given in a plenary session with the professors, the research team and other students, to foster discussion on the projects.

List of Possible Business Relevant Questions

- Who are the users of technology? Using rule based NER for user identification
- Which are the main topics and themes in documents related to technology? Use topic modeling on any kind of document clustering, to identify the topics
- Is there any sentiment related to technology? Use sentiment analysis to spot problems and advantages of a technology
- Which are the main topics of AI applications in management? Analyze MIT Sloan management review papers

- Do word embedding work well for technologies? Explore the similarity between technologies and asses their quality
- Can you identify trends of AI applications?
- Can you carry out a competitive analysis, identifying the main players, their size and relative position?
- …

List of topics and fields of interest



Marketing perspective

Consumer behavior

- User behavior (customer engagement)
- Online community (online learning, online community detection, online community leadership)
- Social network effects

Consumer sentiment

- Online review (marketing and sales prediction, review helpfulness, social influence, customer satisfaction, text mining)
- Rating & ranking
- Sentiment analysis (opinion mining, sentiment detection, sentiment classification)

Marketing perspective/2

Marketing strategy

- Sales forecasting
- Advertising and targeting (mobile A&T, digital and social media)
- Brand analysis
- Electronic Word-of-Mouth (EWoM)
- Market analysis (market prediction, e-commerce)
- Recommendation (recommendation systems, personalisation)
- Data Analytic techniques
- Churn prediction
- Dynamic pricing/ Yield management

Marketing perspective/3

Customer service

- customer service analytics
- complaint management
- chatbot
- advanced CRM