

NLP Applications II

Course logistics

Plan for the course

- Course on most relevant tasks for building NLP applications.
- Allow to understand
 - When and how to apply NLP techniques in real-world scenario.
 - Not only the use pre-existing NLP libraries,
 - But be able to reimplement and adapt own models.
- Provide leads to explore and learn further
 - Master projects ideas welcome!
 - Open for collaborations hitz.eus and ixa.eus

Plan for the course

- Regular sessions: 13 sessions of 150 minutes
 - Each session mixes theoretical and hands-on laboratories
 - Extra session for the presentations!
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- Material available in egela and google-drive
 - <http://ixa2.si.ehu.eus/~jibloleo/nlpapp2>
 - Course is divided in three main parts:
 - Information Extraction systems (Oier Lopez de Lacalle) 6 sessions in total
 - Question Answering systems (Ander Barrena) 4 sessions in total
 - Recommender System and Conversational systems (Mikel Larrañaga) 3 sessions in total

Schedule

1. Information Extraction (Oier)

- Tuesday, March 15, 2022, 3:00pm – 5:30pm
- Tuesday, March 22, 2022, 3:00 – 5:30pm
- Thursday, March 24, 2022, 3:00 – 5:30pm
- Thursday, March 31, 2022, 3:00 – 5:30pm
- Tuesday, April 5, 2022, 3:00 – 5:30pm
- Wednesday April 6, 2022, 3:00 – 5:30pm

2. Question Answering (Ander)

- Thursday, April 7, 2022, 3:00 – 5:30pm
- Monday, April 25, 2022, 3:00 – 5:30pm
- Thursday, April 28, 2022, 3:00 – 5:30pm
- Monday, May 2, 2022, 3:00 – 5:30pm

3. Conversational Systems (Mikel)

- Wednesday, May 4, 2022, 3:00 – 5:30pm
- Wednesday, May 11, 2022, 3:00 – 5:30pm
- Monday, May 18, 2022, 3:00 – 5:30pm

Labs, assignments and main project

- **Laboratories** are focused to put the theory in practice (no submission).
- You need to complete and submit **3 assignments**.
 - **Assignment 1.** IE: Intent-classification and Slot-filling
 - **Assignment 2.** QA: QA+IR in open domain
 - **Assignment 3.** CS: Recommender system
 - **Deadline for the assignments: 1st of June**
- **Main Project:** on any open topic related to NLP application.
 - Do the implementation, write-up a technical report (~6 pages), present in class.
 - **Presentations: 1st of June** (to be confirmed)
 - **Deadline for the final report: 8th of June** (to be confirmed)

Labs and prerequisites

- Basic programming experience, university-level course in computer science, experience in Python. Basic math skills (algebra or pre-calculus), but not much!
- Knowledge about machine learning or deep learning is required.
- Laboratories:
 - Python (scikit-learn, pytorch, tensorflow...) using servers from Google Colaboratory
 - Time might be tight => auto-study / finish labs at home / ask for help to lecturers
 - Time might be plenty => review slides / do assignments

Evaluation

Class assignments: 50% of the grading

Final project: 50% of the grading

- Each group of student (**2/3 people**) will propose a subject for the final project to one of the lecturers, depending on his/her interests.
- Project proposal are due to May 19 (note that you will have 2 weeks for finishing!).
- The final project will be graded based on the written report, technicality and presentation, with the following percentages:
 - **write-up** 15%, including features like clarity, structure, background, references, discussion
 - **technical** 20%, incl. features like correctness and depth of the work
 - **poster presentation** 15%, including clarity, structure, discussion