

NATURAL LANGUAGE PROCESSING

C.d.S. *Data Science and Scientific Computing*, a.a. 2020-2021

Dipartimento di Matematica e Geoscienze

Università degli Studi di Trieste

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Hi!

I'm Debora Nozza

PostDoc at Bocconi University

My research project focuses on **Machine** (and Deep) **Learning** for the detection and counter-acting of **Hate Speech** and **Gender Bias**

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Nice to meet you!

Lecturers

◆ Debora Nozza, Ph.D.

- <https://dnozza.github.io/>
- debora.nozza@unibocconi.it

◆ Prof. Matilde Trevisani

- <https://dssc.units.it/people/matilde-trevisani>
- matilde.trevisani@deams.units.it

Aim of the course

Provide you the correct information to:

- Recognize NLP problems
- Apply NLP solutions
- Evaluate the obtained results

Required Skills

- Proficiency in Python
- Linear Algebra
- Basic Probability and Statistics
- Foundations of Machine Learning

Syllabus (Tentative)

1-2	NLP intro + document representation
3-6	Exploration: Information Retrieval, Language Models, Topic Models, Dimensionality Reduction
7	Text Classification
8-10	Deep Learning for NLP
11-12	Applications

Class Structure

- ◆ Monday-Tuesday-Thursday
- ◆ First part: intuition and theory
- ◆ Second part: exercises and practice

Please make questions and interact!

Material

- ◆ <https://github.com/dirkhovy/NLPclass>

- ◆ Books
 - Dirk Hovy. [Text Analysis in Python for Social Scientists](#)
 - Dan Jurafsky and James H. Martin. [Speech and Language Processing](#)
 - Yoav Goldberg. [A Primer on Neural Network Models for Natural Language Processing](#)

Exam and Evaluation

◆ Final Project:

- Choose a domain
- Choose the data
- Implement NLP solution
- Evaluate the results
- Present the project and its insights!

◆ Oral Exam:

- 3 theory questions

Exam and Evaluation

◆ Final Project:

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Evaluation:

- Adopted Methodology
- Experimental Analysis
- Experimental Evaluation
- Presentation

◆ Oral Exam:

- 3 theory questions



Questions?
