Computational Text-Analysis For Political Science

Lesson I

Logistics

All Lecture slides and Code are going to be uploaded on **GitHub**.

Follow the link

Also download and install **Sublime Text** and **Anaconda.**

All our communication is gonna be moved to **Slack**.

To get notified, please download the application.

Follow the link to join

- #debugging_code = is specifically for code related questions
- #slides_code_updates = push notifications for any changes on GitHub rep

What is Natural Language Processing?

The application of computational techniques for the the analysis of human language.

How can we use it in political science?

This will be the focus of the course.

Goal of the course

Offering a broad overview of **natural language processing (NLP) approaches** and **tools**, together with their applications in political science.

Learning how to properly **use** and **evaluate** them.

Take-aways

1. Critically analyse a computational political science paper in all its aspects
2. Become able of re-implementing the approaches presented
3. Learn how to adopt and adapt NLP approaches in other studies

Starting point

No previous knowledge on programming is required. We will work in **Python**.

Overview of the course

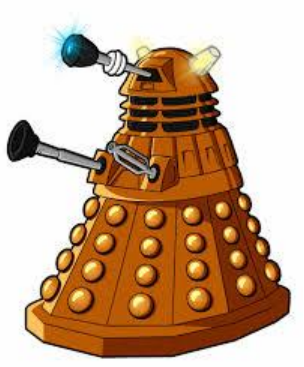
For each topic, first week background on NLP, second week application.

1. Text processing (tokenization, lemmatization, POS-Tagging, NER)
2. Text processing (Word Embeddings and Entities)
3. Text Classification and Sentiment Analysis
4. Clustering and Topic Models
5. This class is based on a course originally developed by Federico Nanni for Political Science at Uni Mannheim (2017)

Four pillars

1. All quantitative models of language are wrong - but some are useful
2. The importance of the human-in-the-loop
3. No-free-lunch theorem
4. Always validate!

VALIDATE!
VALIDATE!
VALIDATE!



Evaluation of the course

A. Daily homeworks - longer on weekend - (100 % grade)

Where do we start?

In today's coding session we learn

Install and Navigate Jupyter Notebooks

Basic Operations in Python

- Python Interactive Shell: Print Function
- Assigning Variables and Values
- Understanding Different Types of Objects in Python
- Mathematical Operations
- Boolean Operations
- Transformation of Objects
- Input function

Exercises - Link to Github Code