

Applications of Computational Linguistics

3 credits

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2023-2024



MIARFID

Official Master's Degree
in Artificial Intelligence,
Pattern Recognition
and Digital Imaging

DSIC



UNIVERSITAT
POLITÈCNICA
DE VALÈNCIA

Topics

- Fake news and conspiracy theories in social media
- Hate speech, misogyny, sexism in texts and memes
- Figurative language processing: humour, irony and sarcasm
- Author profiling in social media: age, gender, personality, native language, language variation
- Sentiment analysis and deceptive opinions

Bibliography

- D. Jurafsky, J. H. Martin. **Speech and Language Processing. An Introduction to Natural Language Processing, Computational Linguistics, and Speech Recognition.** 3rd edition, 2023
<https://web.stanford.edu/~jurafsky/slp3/ed3book.pdf>
- R. Mitkov (Ed.) **The Oxford Handbook of Computational Linguistics.** Oxford University Press. 2003
- J. Pennebaker. **The secret life of pronouns: What our words say about us.** Bloomsbury Publishing, 2011
- Bing Liu. **Sentiment Analysis: mining opinions, sentiments, and emotions. How to build a Sentiment Analysis system, and much more.** Cambridge University Press, 2015
- Bing Liu. **Sentiment Analysis and Opinion Mining: A comprehensive introduction and survey.** Morgan & Claypool, 2012
- F.A. Pozzi, E. Fersini, E. Messina, and B. Liu (Eds.) **Sentiment Analysis in Social Networks.** Elsevier Science and Technology, 2017

Bibliography

- E. Cambria, D. Das, S. Bandyopadhyay, A. Feraco (Eds). **A Practical Guide to Sentiment Analysis**. Socio-affective Computing, Springer, 2017
- G. Ruffo, A. Semeraro, A. Giachanou, P. Rosso. **Studying Fake News Spreading, Polarisation Dynamics, and Manipulation by Bots: a Tale of Networks and Language**. In: Computer Science Review, vol. 47, 2023 <https://doi.org/10.1016/j.cosrev.2022.100531>
- P. Rosso, B. Chulvi. **Los prejuicios en las sociedades digitales: Identificación automática de estereotipos y hate speech**. In: Archiletras, vol. vi, pp. 171-188, 2021
- P. Rosso, M. Potthast, B. Stein, E. Stamatatos, F. Rangel, W. Daelemans. **Evolution of the PAN Lab on Digital Text Forensics**. In: Ferro N., Peters C. (Eds.). Information Retrieval Evaluation in a Changing World - Lessons Learned from 20 Years of CLEF. The Information Retrieval Series, vol. 41, Springer, 2019

Sentiment analysis in social media

1. Challenges of Sentiment Analysis in Social Networks: An Overview
2. Beyond Sentiment: How Social Network Analytics Can Enhance
3. Semantic Aspects in Sentiment Analysis
4. Linked Data Models for Sentiment and Emotion Analysis in Social Networks
5. Sentic Computing for Social Network Analysis
6. Sentiment Analysis in Social Networks: A Machine Learning Perspective
7. **Irony, Sarcasm, and Sentiment Analysis**
8. Suggestion Mining From Opinionated Text
9. **Opinion Spam Detection in Social Networks**
10. Opinion Leader Detection
11. Opinion Summarization and Visualization
12. Sentiment Analysis with SpagoBI
13. SOMA: The Smart Social Customer Relationship Management Tool: Handling Semantic Variability of Emotion Analysis with Hybrid Technologies
14. The Human Advantage: Leveraging the Power of Predictive Analytics to Strategically Optimize Social Campaigns
15. Price-Sensitive Ripples and Chain Reactions: Tracking the Impact of Corporate Announcements with Real-Time Multidimensional Opinion Streaming
16. Conclusions and Future Directions

A practical guide to sentiment analysis

1. Affective Computing and Sentiment Analysis
2. Many Facets of Sentiment Analysis
3. Reflections on Sentiment/Opinion Analysis
4. Challenges in Sentiment Analysis
5. Sentiment Resources: Lexicons and Datasets
6. Generative Models for Sentiment Analysis and Opinion Mining
7. Social Media Summarization
- 8. Deception Detection and Opinion Spam**
9. Concept-Level Sentiment Analysis with SenticNet

Lectures Thursday 3-6 PM

Evaluation

- 20% practical work (lab: NLTK)
- 60% participation in the **oppositional thinking analysis** (conspirative theories vs critical thinking narratives) **PAN** shared task, report and presentation (*)
- 20% questionnaire (topics of theory) or participation in the **EXIST** shared task on **sexism identification in memes**

(*) presentation on PAN or EXIST

Shared task

- **Telegram:** 5k messages  + 5k messages 
- **COVID-19**

<https://pan.webis.de/clef24/pan24-web/oppositional-thinking-analysis.html>

Private owned WHO **A** with investors like Bill Gates **A** can declare a new pandemic out of thin air anytime they want and the world governments ruled by their puppets **F** as well as their media **F** starts with the constant fear mongering **CN** , getting people **V** to get their pharma companies **A** injections and drugs that are magically ready in light speed, clear induction that they have been ready for the orchestrated fake pandemics, long before they start with the constant fear mongering **CN** by the media **F** and governments **F** . To those awake already **CM** , we know their games and agenda **O** , but sadly most people **V** fall for it, again and again and pay a hefty price, often with their health, lives, the loss of their loved ones **CN** . These are very evil beings **A** , intent on destroying us **O** regular people **V** .

Figure 1: A Telegram text annotated with elements of oppositional narrative.

Shared task



EXIST 2024

Tasks

How to participate

Important dates

Dataset

Organizers

Sponsors

Contact

2021

2022

2023



EXIST:sEXism Identification in Social neTworks

Fourth Shared Task at CLEF 2024

Subtasks 4-6 on **memes** in 🇪🇸 (optional: also in 🇬🇧):

- **Sexism identification**
- **Source intention:** reported or direct
- **Sexism categorization:** ideological, stereotyping and dominance, objectification, sexual violence, misogyny

<http://nlp.uned.es/exist2024/>

