Ιόνιο Πανεπιστήμιο

Τμήμα Πληροφορικής

Μάθημα: Γλωσσική Τεχνολογία

Επιτηρητής Καθηγητής: Κερμανίδου Κάτια - Λύδα

Μέλη Ομάδας: Ζαχαριάδης Αλέξανδρος, Π2015082

Τσιβιντζέλη Χρύσα, Π2015185

Εξάμηνο Μαθήματος: Ζ’

References:

[1] http://www.aclweb.org/anthology/I13-1079

Suicidal Tendencies: The Automatic Classification of Suicidal and Non-Suicidal Lyricists Using NLP

By Matthew Mulholland and Joanne Quinn,Montclair State University.

Using Natural Language Processing (NLP), they try to predict the likelihood that a musician will commit or has committed suicide. Using the Weka machine learning suite and its algorithms, and a database of songs, by different lyricists, that comprised a development set, a training set, and a test set, they calculated various vocabulary and syntactic features in order to create a suicide/non suicide song classifier.

[2] http://www.aclweb.org/anthology/W12-2502

A Computational Analysis of Style, Affect, and Imagery in Contemporary Poetry

By Justine Kao and Dan Jurafsky, Stanford University.

They examine poems from both award winning poets and amateur poets. By analyzing elements such as diction, (word frequency, type-token ratio), sound device (rhyming, alliteration, consonance, assonance), affect and imagery on a representative set of poems, they were able to examine poetic craft and reveal potential elements of skill and sophistication in modern poetry.

[3] https://academic.oup.com/dsh/article/26/4/435/1052059

Longitudinal detection of dementia through lexical and syntactic changes in writing: a case study of three British novelists

By Xuan Le, Ian Lancashire, Graeme Hirst, Regina Jokel, University of Toronto.

This research aims to determine whether linguistic markers of Alzheimer's disease can be detected in a diachronic analysis of aspects of an individual's writing. The subjects for this are well known novelists who have a large, lifelong body of work. The elements that are examined are lexical (vocabulary size, repetition, word specificity, word class deficit and fillers) and syntactic (overall complexity, use of passive, auxiliary verb, agentless passive).

[4] https://sci-hub.tw/10.1109/MCI.2018.2840738

Recent Trends in Deep Learning Based Natural Language Processing

By Tom Young, Beijing Institute of Technology, Devamanyu Hazarika, National University of Singapore, Soujanya Poria and Erik Cambria, Nanyang Technological University.

This article presents significant deep learning related models and methods that were used for many Natural Language Processing tasks and a walk-through of their evolution. It also contains a summary of the various existing models, and puts forward a detailed understanding of the various techniques of deep learning in NLP.

[5] https://academic.oup.com/jamia/article/12/4/448/927373

Automated Detection of Adverse Events Using Natural Language Processing of Discharge Summaries

By Genevieve B. Melton, MD George Hripcsak, MD, MS

In this paper, using NLP methods the authors are trying to determine whether they can effectively detect adverse events defined in the New York Patient Occurrence Reporting and Tracking System (NYPORTS) using discharge summaries, regarding a broad range of adverse events in text documents. Since most institutions lack a detailed record of their patients' care in coded electronic format, symptoms, physical findings, and clinical reasoning are recorded as narrative text in notes, limiting the performance of event detection systems, therefore rendering such research papers valuable.

[6] https://sci-hub.tw/10.1176/ajp.130.12.1327

A Computer Interview for Suicide-Risk Prediction

By John H. Greist, Thomas P. Laughrehn, David H. Gustafson, Fred F. Stauss, Glenn L. Rowse and John A. Chiles.

The authors developed a computer program, a mathematical prediction model, and a "subjective" data base. A summary of the clinical state of 22 patients were obtained, as well as a prediction of whether they would make a suicide attempt or not. The prediction model was more accurate than clinicians in predicting suicide attempts.

[7] https://www.hindawi.com/journals/cmmm/2016/8708434/

Novel Use of Natural Language Processing (NLP) to Predict Suicidal Ideation and Psychiatric Symptoms in a Text-Based Mental Health Intervention in Madrid

By Benjamin L. Cook, Ana M. Progovac, Pei Chen, Brian Mullin, Sherry Hou, and Enrique Baca-Garcia.

This paper documents the development of models that can predict risk of suicide or psychological distress among adults recently discharged from psychiatric inpatient or emergency room settings in Madrid, using NLP and machine learning. The variables taken into consideration were structured items (relating to sleep and well-being, etc), as well as responses to unstructured questions.

[8] https://www.cs.waikato.ac.nz/~ml/publications/1995/Garner95-WEKA.pdf

WEKA: The Waikato Environment for Knowledge Analysis

By Stephen R. Garner, University of Waikato.

An introduction to the WEKA environment and its machine learning techniques and algorithms, in order to be used for the development of the assignment.

[9] https://sci-hub.tw/10.4137/BII.S4706

Suicide Note Classification Using Natural Language Processing: A Content Analysis

By John Pestian and Pawel Matykiewicz, Department of Biomedical Informatics, Cincinnati Children's Hospital Medical Center, Henry Nasrallah and Aurora Bennett, University of Cincinnati, and Antoon Leenaars.

This paper presents an attempt to determine the role of computational algorithms in understanding a suicidal patient's thoughts, as represented by suicide notes. It focuses on

developing methods of natural language processing that distinguish between genuine and elicited suicide notes. It is hypothesized that machine learning algorithms can categorize suicide notes as well as mental health professionals and psychiatric physician trainees do. The data used are comprised of suicide notes from 33 suicide completers and matched to 33 elicited notes from healthy control group members. Eleven mental health professionals and 31 psychiatric trainees were asked to decide if a note was genuine or elicited. Then predictions from 11 mental health professionals and 31 psychiatric trainees were compared to 9 different machine-learning algorithms.

[10]
https://surface.syr.edu/cgi/viewcontent.cgi?referer=https://scholar.google.gr/&httpsredir=1&article=1019&context=cnlp

Natural Language Processing

By Elizabeth D. Liddy, Syracuse University.

In this paper, basic concepts, approaches and terminology regarding Natural Language Process are explained, making it easier to comprehend some of the methods essential for this assignment so we can integrate them into it.