

**P. Giannouris, D. Karamouzas, I. Mademlis, I. Pitas, “Tweet sentiment analysis”**

**Abstract:** Sentiment analysis in texts, also known as opinion mining, is a significant Natural Language Processing (NLP) task, with many applications in automated social media monitoring, customer feedback processing, e-mail scanning, etc. Sentiments like polarity, aggression, and bias can be recognized in tweets. Typically, such methods combine word embedding approaches and NN sentiment recognition layers. This lecture overviews automated public opinion monitoring, using semantic NLP-derived tweet descriptors. In particular, a four-dimensional descriptor, which quantifies text polarity, offensiveness, bias and figurativeness. The results are quite good, particularly in English texts. The proposed mechanism was applied to the 2016/2020 US Presidential Elections tweet datasets. Despite recent progress due to advances in Deep Neural Networks (DNNs), texts containing figurative language (e.g., sarcasm, irony, metaphors) still pose a challenge to existing methods due to the semantic ambiguities they entail. This lecture presents a neural knowledge transfer scheme for DNN-based sentiment analysis of figurative texts. Hints about figurativeness implicitly help resolve semantic ambiguities.