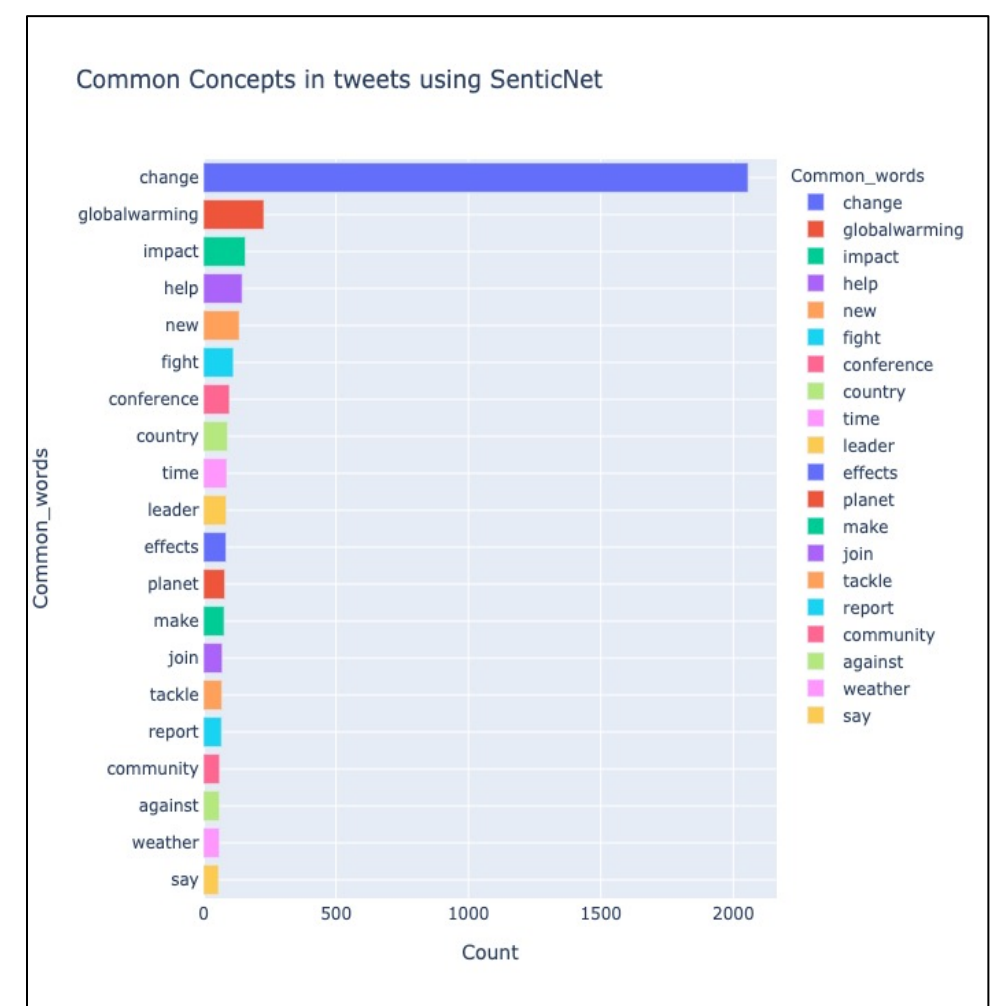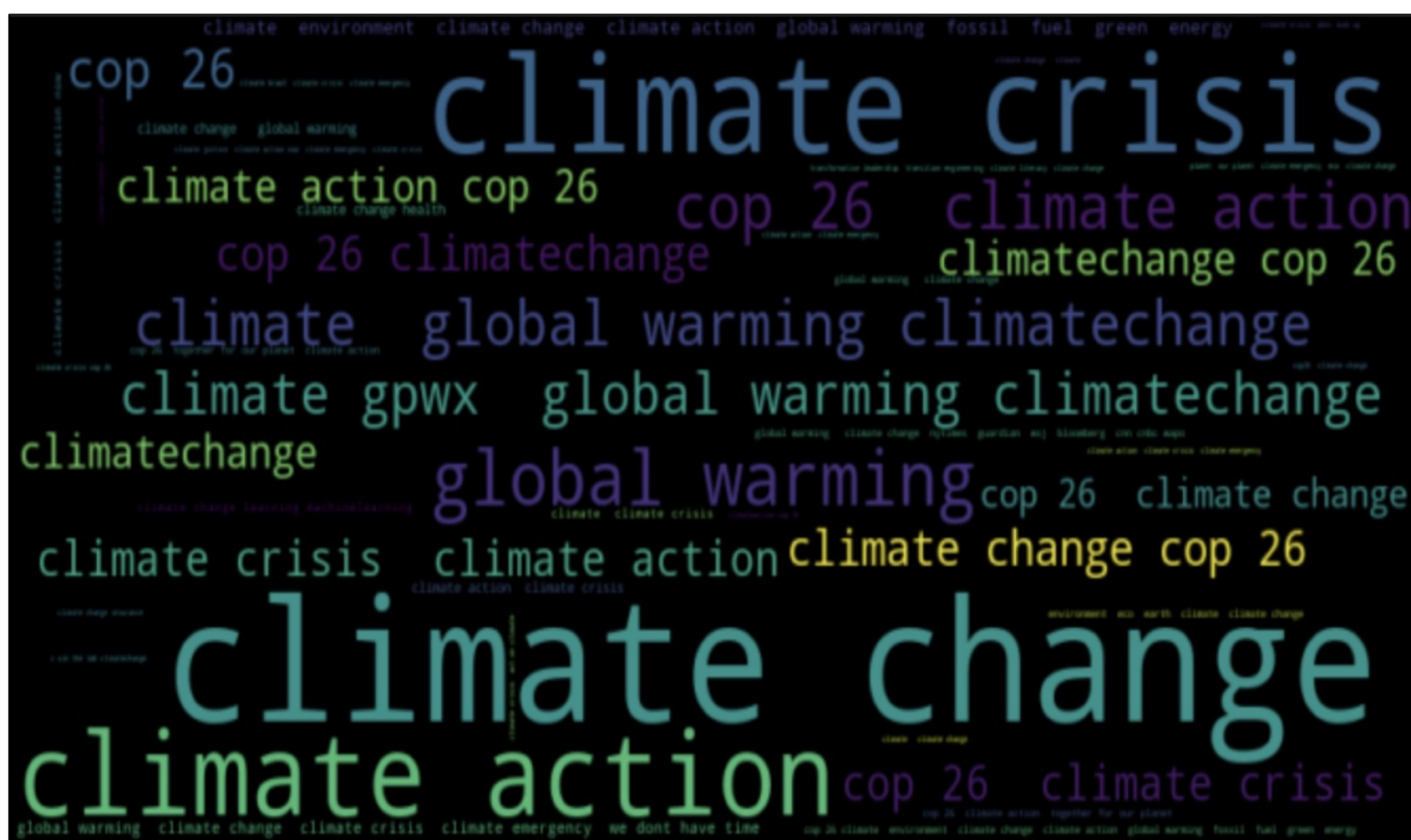# Detecting Polarity and Concepts of Climate Change Tweets using SenticNet

CZ4079 Final Year Project: #SCSE21-0232

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Project Objectives:

Twitter user sentiments on climate change have been analysed through the use of SenticNet, a knowledge base that provides a set of semantics, sentics, and polarity associated with 200,000 natural language concepts. This project aims to analyse how SenticNet classifies ~4000 climate change opinions from Twitter and compare it with manually annotated sentiments as well as sentiments classified through a pre-trained model like VADER.

The Intergovernmental Panel on Climate Change (IPCC) released its Working Group 1 report on Climate Change in August 2021, which has sparked worldwide debates on social media and online forums. Many have since taken to Twitter, one of the most popular social media platforms with 217 million active daily users, to express their sentiments - advocating for policy changes or expressing disbelief in the shocking results. One of the essential tasks in analysing user opinions is sentiment classification. Sentiment classification uses Natural Language Processing (NLP) to classify textual data as positive, negative, or neutral.

Most recent research in sentiment analysis focuses on subsymbolic AI, i.e., machine learning, a powerful way to analyse large amounts of data, categorizing and classifying. It is essential to integrate logical reasoning to detect meaningful patterns in natural language text and statistical and vector categorizations. Thus, this paper makes use of SenticNet (specifically SenticNet 6), a knowledge base that makes use of symbolic and subsymbolic AI to increase the accuracy of NLP significantly. While climate change opinions have been mined before for the 2013 IPCC Working Group 1 Report, the analysis focused only on statistical methods, i.e., subsymbolic AI. This project covers climate change opinions after the 2021 IPCC Working Group 1 report was published and uses symbolic and subsymbolic AI to classify sentiments.