MASTER THESIS: HOW DATA SCIENCE CAN HELP CLIMATE CHANGE?

"Data science is a concept to unify statistics, data analysis, machine learning and their related methods in order to understand and analyze actual phenomena with data" - wikipedia.org. The general objective of this thesis is to use Data Science methodology and tools to extract knowledge and insights regarding online disinformation on Climate Change.

Background: there is an increasing politicization of climate science in an effort to delegitimize the scientific consensus about climate change; this is carried out mostly by vested-interest groups through organized disinformation campaigns and fake news. On a macro scale, this is an important issue because legislators tend to act according to what they perceive to be the concerns of their electoral base. Thus, public knowledge about climate change can push legislation towards policies that will tackle the issue and counteract the commercial lobbying from industries.

In short, the student will dive deep into DS in order to understand the people's perception about Climate Change with a view of designing strategies and education tools to help mitigate the dissemination of false news on the internet.

TASKS: Definition of a methodological approach for the project, e.g. TDSP, CRISP-DM or KDD.
1. Frame the problem: definition of research question(s) to be answered, e.g:
   a. What are the perceptions of different social groups (in terms of age, gender and social class) about the situation related to Climate Change?
   b. What are the criteria used for the acceptance of information among the population, regarding trust in origin, source, transmission on social networks?
   c. What are the psycho-emotional reactions, for example fear, stigma and anxiety, in the face of rumors related to global warming?
   d. What is the role of non-textual media (images, videos, audio, etc.) on the effectiveness of and people's engagement with misinformation?
2. Collect the raw data needed for answering the problem, Process the data for analysis, Exploration of the data, Perform in-depth analysis.
3. Communicate results of the analysis. Perhaps also propose guidelines to support decision-making and official communication strategies related to Climate Change in the context of fake news.

STUDENT PROFILE:
- BA in Information Technology, Physics, Mathematics, Electrical Engineering, Computer Science, Software Engineering or related.
- Strong knowledge of Python and familiar with machine learning libraries (e.g. Tensorflow, PyTorch and Scikit-Learn).

PROJECT PROFILE:
- Analysis: 3/5
- Implementation: 5/5 (Python required)
- Literature: 2/5

HOW TO APPLY: You can apply for this research opportunity by email. Please include your CV, transcripts of Grades in your application.

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