Webscraping Nature-based Solutions
MSc Thesis Assignment

Context:

Nature has the power to protect people. Through Nature-based Solutions (NbS), we can reduce the occurrence and impact of extreme weather-related events, thereby saving lives and enhancing the resilience of communities. Working with nature not only contributes to disaster risk reduction, but also improves human well-being and builds the resilience of nature such as increasing biodiversity.

The Netherlands Red Cross is proposing an NbS system analysis process to carry out an efficient and timebound analysis at the landscape or watershed level to help identify priority NbS actions. Moreover, this method will identify key enabling conditions for subsequent co-design by Red Cross Red Crescent Movement partners, together with communities and relevant local non-Movement partners.

The first step in NbS system analysis process is focused on identifying and capturing existing good practices on NbS at the national/ regional level, describing their current impact and potential, and opportunities for local action and scale. This involves creating an NbS inventory which provides an overview of existing measures in and around the study area with a potential to harness the power of nature.

Thesis Goal:

The Netherlands Red Cross' data and digital team, 510, would like to support the creation of this NbS inventory within the system analysis process carried out with National Societies. This inventory will be in the form of a dynamic database that will be filled automatically using a web-scraping tool.

Methodology:

- Define search terms for NbS using a previous intern's work as a baseline, i.e. "climate mitigation actions"
- Develop a Natural Language Processing (NLP)model to scrape the web for the search terms
- Link the NLP model to a user-friendly database which automatically updates

Case Studies:

- Develop and test the tool for the Egyptian Red Crescent, where the exercise of collecting NbS has already been carried out manually. Validate the accuracy of the results and improve the model
- Repeat the tool testing with the Ethiopian Red Cross and a National Society of IFRC's choosing, to further improve its features

Skills Requirements:

- Python
- Experience with LLMs is a bonus

In case of any questions, please reach out to:

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