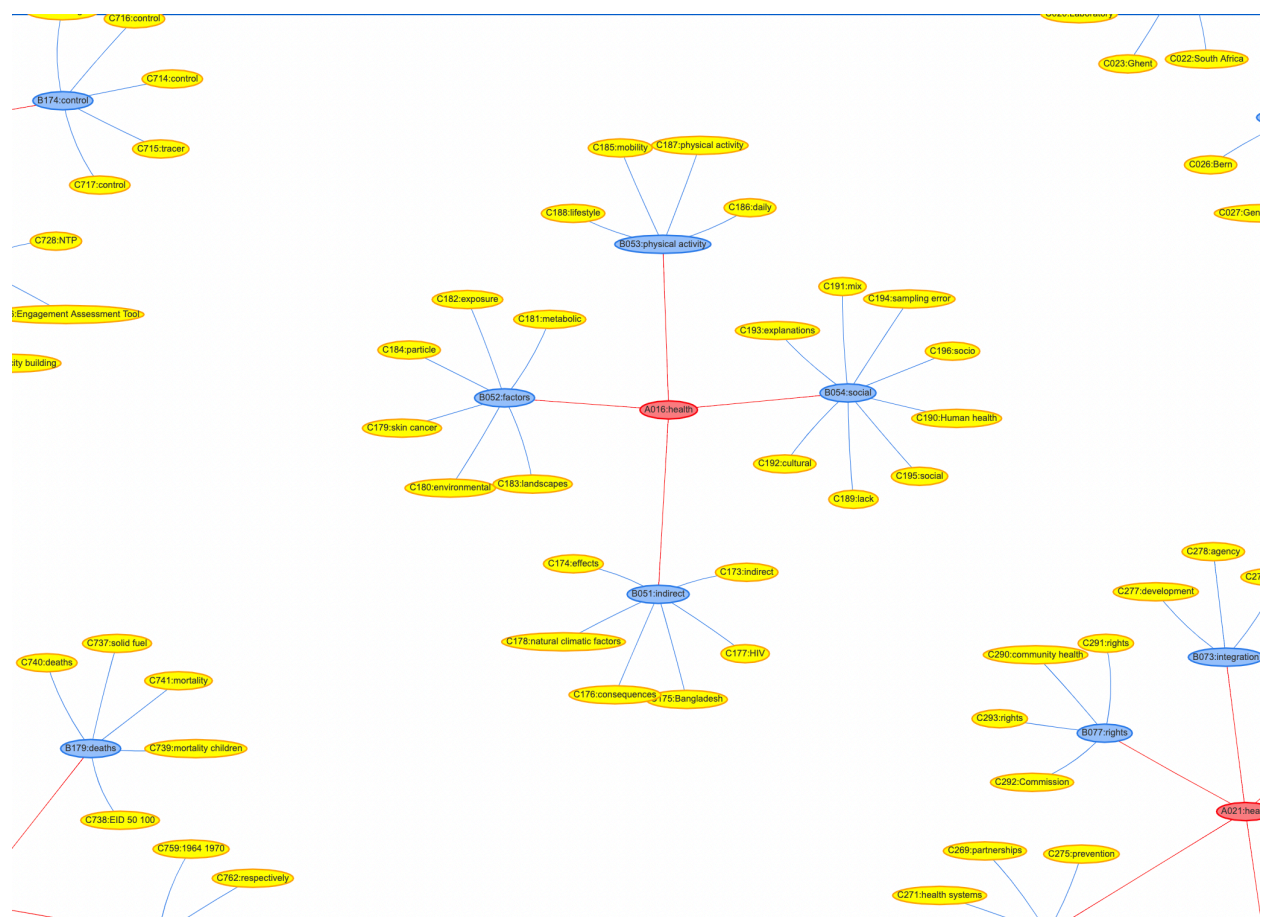


Climate change is shown to increased migration from climate impacted locations. The aggregate cost of climate change, and migration due to climate change, on civilization and the whole world is under-researched and under-developed, and lacks *substantial* active engagement. The imperative to act is critical, existential and present. The goal of this study was to use machine learning to refine our scope of research and expertise in climate migration, and to gain exposure in machine learning and big data science.

\*We used semantic embedding to vectorize the abstract's text by sentence. The sentences were vectorized in 512 dimensions using the spacy plugin for python, spacy-universal-sentence-encoder, [https://github.com/MartinoMensio/spacy-universal-sentence-encoder/releases/download/v0.4.3/en\\_use\\_md-0.4.3.tar.gz#en\\_use\\_md-0.4.3](https://github.com/MartinoMensio/spacy-universal-sentence-encoder/releases/download/v0.4.3/en_use_md-0.4.3.tar.gz#en_use_md-0.4.3) and other listed plugins.

\*To avoid *mothers trees* described by common English words (i.e. “the”, “it”, “is”, “and”, etc...) we implemented stop words that allow for unique words.



Visual Aid for analyzing clusters. A (mother) clusters in RED, B clusters in BLUE, C clusters in YELLOW.

Clustering the data enabled unique analysis and categorical understanding of articles.

Key Insights of Climate Migration Analysis:

\*Chronic, long term advents to migration included sea level rise, drought, heat waves, fires, etc.

\*Acute migration advents, forced displacement included hurricanes, fires etc...

\*Health Risks inspired migration. Primarily vector borne disease, in mosquitoes, ticks and other animals for example.

\*Also, relevant to the process of migration are the associated health risks, and threat someone's way of life.

### **Conclusion**

The project successfully employed machine learning techniques to expedite the selection process of articles to research. I gained extensive knowledge on climate migration, python, and other plugins.