**Natural Language Processing and Understanding for**

**Policy Analysis –October/Beginning of November Overview**

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For the next segment of my course I focused on research for my final project, and I employed your NPO classifier for my Statistical Modeling Portfolio project on nonprofit resource diversification and resource dependence.

This month I spent a lot of time researching studies on using the BERT algorithm. At one point I thought I could utilize what is called aspect-based sentiment analysis, which basically separates a body of text and gives ratings based to each topic composed within it. My idea was to use this method to create sentiment ratings for a host of topics embedded within Trump’s tweets all at once. The problem with this method is that it takes a considerable amount of time to label data for pretraining. Additionally, because tweets have a word count limit, most of them are about a single or two closely related topics. For this reason, a simple keyword extraction might be sufficient to isolate Trump’s tweets about migration, Hispanic Americans, and China.

My final project is going to be an analysis of Trump tweets using sentiment analysis with BERT. My hypothesis is that Trump’s tweets about Hispanic Americans and migrants became more positive as public opinion on his migration policies shifted. Since his election in 2016, public opinion about migration improved for virtually all groups, including Republicans.[[1]](#endnote-1) This shift was most pronounced for Hispanic Americans, who were often the target of many of his most bombastic tweets running up to his first campaign.

As a result, I believe Trump and his campaign changed their messaging strategy as public opinion fell out of his favor, which seemed to have an impact on the election. The Hispanic vote ended up being the deciding factor in the 2020 battleground state of Florida. Comparing 2016 and 2020, Trump improved his margin for all Hispanic groups, especially with South and Central Americans by 47% and 37% respectively.[[2]](#endnote-2)

To make a comparison, I am going to look at his tweets about China as well. Public opinion polling showed the opposite trend, American opinion worsening for a variety of topics related to China.[[3]](#endnote-3) If Trump indeed does care about opinion polls, we should see comparable shifts in his tweets as well.

For the later part of the month I was able to use your nonprofit classifier. In total, I used it to classify over 200,000 nonprofits based on their mission statements included in their 990 Form for tax year 2015. Despite having only one GPU core, the algorithm finished in only five hours. After classification, I was able to run logistic regression models on each category to see how resource diversification and resource dependence affected various measures of nonprofit resilience. For example, resource diversification did not seem to matter much for nonprofits in the arts, environment, and education categories, but it was a significant factor for health and human service organizations. The final results of this project are still in the works, but I will certainly cite your classifier professor!

1. https://news.gallup.com/poll/1660/immigration.aspx; https://www.pewresearch.org/hispanic/2018/10/25/views-of-immigration-policy/ [↑](#endnote-ref-1)
2. https://www.theguardian.com/commentisfree/2020/nov/14/joe-biden-trump-black-latino-republicans [↑](#endnote-ref-2)
3. https://www.pewresearch.org/global/2020/04/21/u-s-views-of-china-increasingly-negative-amid-coronavirus-outbreak/ [↑](#endnote-ref-3)