Political Meme Classification

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Introduction to Deep Learning

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Overview

A "meme" is defined by Merriam-Webster Dictionary as "an amusing or interesting picture, video, etc., that is spread widely through the Internet."[1] Many such memes feature political figures and themes, and are capable of synthesizing opinions on current events and policy into easily shareable cultural artifacts.

For my semester-long project, I will test a neural network's capability to learn to recognize memes belonging to the two most prominent viewpoints in United States politics, conservative and liberal. Because it is sometimes difficult for humans to understand the meaning of a meme and classify its political affiliation, it will be fascinating to consider the patterns on which the model relies to make these decisions and see how successful it becomes at executing this task.

1 Data Preparation

1.1 Data Collection

To collect the images for this project, I searched through conservative and liberal meme sites on Reddit, Facebook, and Pinterest. I have assembled a collection of 1000 images, evenly distributed between the two classes, shown in Figure 1. Figure 2 displays one image for each label.

1.2 Data Normalization

The normalization of the images will involve re-scaling all images so that their resolutions are equivalent by multiplying the input data by 1/255. Because much of each class was taken from different sites, some images may need to be re-scaled prior to normalization so that the model does not incorrectly recognize patterns pertaining to common resolutions in each class.

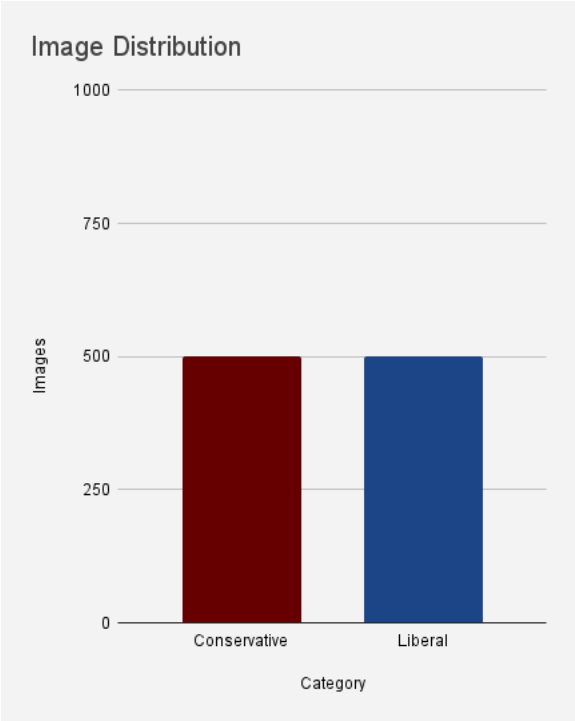

Figure 1: Even distribution of images in the "Conservative" and "Liberal" classes.

Figure 2: Sample of a conservative meme and liberal meme, respectively.

Since a meme's coloration or lack thereof may be significant to the model's determination of whether the sample belongs to either class, at this stage, I do not plan to convert the images to grayscale. Other transformations may become helpful later in the process of creating and running the model.

References

[1] Merriam-Webster. "meme". `https://www.merriam-webster.com/dictionary/meme`, 2022. [Online; accessed 3-February-2022].