A2 Write Up

1. What scheme or schemes did you try? If you came up your own idea, describe it here.

I came up with my own idea based off of the context-adaptive approach. I first attempted to compare all subsequent pixel values to the ones of the first frame but realized I could achieve better compression in another manner. Thus, I sought to compare the pixel values per frame with the same pixel in the previous frame. I then stored these values as differences to maximize the compression of the video file. I was able to achieve close to 50% compression with this method.

1. Why do you think your scheme would do a good job predicting pixel values? How does your scheme exploit temporal and/or spatial coherence?

I believe my scheme does a good job predicting pixel values because of how I was able to take advantage of temporal coherence. This is due to the fact that each pixel's intensity value for a frame is likely to not vary drastically from its last frame.

1. When applying the English text-based models (static, adaptive, and context-adaptive) to the video data, which scheme performed best? Does the scheme you developed compress better or worse than the English text-based models when applied to video data? If you weren't able to finish and test your own scheme, how do you think your scheme would fare in comparison to the English text-based models?

Adaptive: 1.01 mb

Context adaptive: 0.887 mb

Static: 1.01 mb

My scheme: 0.592 mb

Of the given models, the context-adaptive scheme performed the best in terms of data compression. To my delight, my scheme as was able to achieve even better than the English text-based models when applied to video data.

1. What is one change you could make to your scheme that might improve its results?

I believe my scheme does a very decent job of compressing the video file. However, it is true that my approach only takes into account the previous pixel. Potentially modifying this to incorporate a broader scope of pixels or assessing average values could allow it to further improve results and thus make the compression even better.