Title: Modeling Sub-Document Attention Using Viewport Time
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I selected this paper because as a developer in the webspace, it genuinely bothers me that data collection is done in a quantity over quality fashion, which leads to relatively simple websites with abysmal performance because of the sheer amount of embedded trackers.

The paper leverages a relatively simplistic metric called “viewport time” to measure the reading rate of consumers on a website with long-form articles. This aforementioned reading rate is derived from how long certain HTML elements on the website spend on the user's display. In my opinion, the paper’s contribution type falls under the category of “Theory and modelling”. The justification for this comes from the fact that the paper does not necessarily produce a revolutionary end result, but is able to come very close to the results of cutting-edge eye-tracking studies that are far more expensive and difficult to conduct.

The paper’s main contributions are three increasingly complex models that all strive to estimate the user’s reading rate by using viewport time. The naive baseline model (UAM) assumes that the reader’s attention is divided uniformly across each HTML element in the document. In the second model (UVAM), the user’s estimated attention is uniformly distributed across all currently visible HTML elements as well as assigning an even probability for any pixel on the screen to be viewed. The third and final model (GVAM) works very similarly to the UVAM model, but the estimated viewport attention equation uses the standard deviation and mean value from a previous study on reading rates.

To validate the model estimated reading rates, the results of an empiric, cross-language study was used. Based on the presented comparisons, both the UVAM and GVAM models significantly outperformed the baseline UAM model, and the more complex GVAM model was able to gain an advantage over the UVAM model. The GVAM model ended up with one clear outlier language (Spanish), and the underlying reason for its performance was never identified.

The dataset for the models is certainly large enough, but perhaps the authors were too strict when pruning “unacceptable users”. If all the remaining users act more or less the same way, that would make the paper’s results less significant since they’re only able to estimate a certain type of user’s behaviour.

It never ceases to amaze me that with all the improvements of the industry, quantity still reigns king when it comes to data collection. I started wondering whether this type of “effective low tech” solution could be used to detect and reduce the spread of fake news and clickbait by verifying whether the important sections of the article were read at a similar rate to the title and early paragraphs. It is a little depressing that this type of technology seems fixed on finding new ways of exploiting human psychology to keep readers engaged for longer, rather than trying to improve human discourse, but perhaps there’s room for that in another paper.