Data Analysis on Scrollability for Webpages

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Abstract

Data analysis plays a major role in assessing the impact of digital content with respect to various page elements, such as scroll parameters, page interaction parameters, page dwell time. Scrollability of the user in the webpage and dwell time are considered as the major factor in order to improve the viewability for the digital content. Recurrent neural networks with LSTM (Long Short-Term Memory) are used to find both scroll depth and dwell time. Recurrent Neural Network produce predictive rebuilds in sequential data which is used to improve upon advertisement viewability and customer engagement with the advertisement.

Keywords - *Computational advertising, Viewability Prediction, Sequential Prediction, Recurrent neural networks ,user behaviour*

I. INTRODUCTION

A digital publisher brings many marketing benefits, e.g., efficient brand building and effective audience targeting. In display advertising, an advertiser pays an online publisher for space on WebPages to display a banner during page views in order to attract visitors that are interested in its products. A page view happens when the webpage is requested by a user and displayed on a screen. One display of an ad in the page view is called an ad impression, the basic unit of ad delivery. Pay-by-action and pay-by-impression are the two main ad pricing models adopted in the current online display advertising ecosystem. In pay-by-action, advertisers are charged when the impressions are clicked on or converted (i.e., purchase). However, the click and conversion rates are often very low; and, often, advertisers cannot achieve their

marketing goals and thus lose trust in publishers. Furthermore, pay-by-action is not suitable for certain advertisers, e.g. banks, that do not expect users to immediately purchase their products and service through ads. They just expect users to get familiar with their products and recall them in the future.

II. PROPOSED WORK

When the user is reading a page, it is intuitive that the dwell time of a page depth is highly related to the user's interests and reading habits, the topic of the article in the page, aesthetic design at that page depth, etc. Different users may have different reading patterns on an interesting page. Thus, the characteristics of individual users, WebPages, and page depths should be taken into account for depth level dwell time prediction. However, it is non-trivial to explicitly model user interests, page characteristics, and the attractiveness of page depths. Web content publishers usually do not have detailed user profile information, including gender and age. The only user profile they may know is the user agent in the HTTP request and the user geo locations inferred from IP addresses. Also, modeling page interestingness and popularitis still an open research problem. More importantly, the complex interactions of these three factors must be modeled so that their joint effect is captured. Therefore, predicting user reading behavior at page depth level is highly challenging.
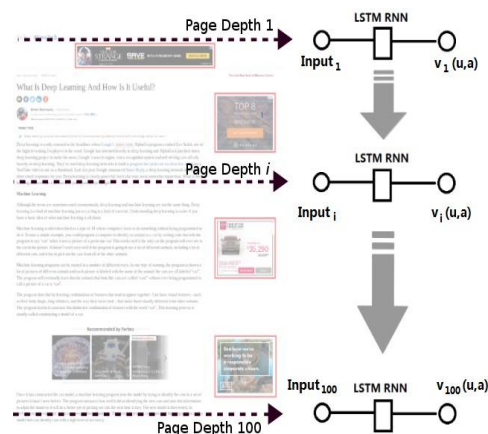
III.ALGORITHM

RNN(RECURRENTNEURAL NETWORKS)- It produces output, copies that output and loops it back into the network. Recurrent Neural Networks add the immediate past to the present.
LSTM (LONG SHORT TERM MEMOER)- Long Short-Term Memory, is a particular type of recurrent neural networks that got lot of attention recently within the machine learning community.
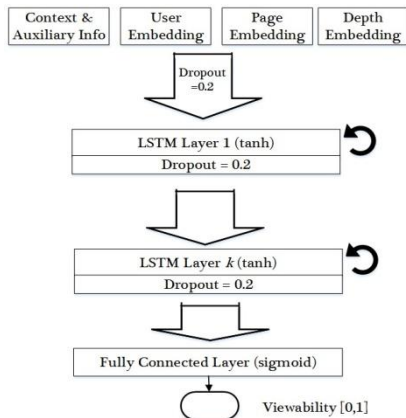
IV. MODULES

A. User login

If the user is already registered then the user can login the web page and clickl the webpage link and view the webpage content. If the user is new user then user should register it and should login the webpage and can view the webpage content .

B. Admin login

Admin is the one who watches the actions of the user on webpage and stores data in the database .admin will analyse the user actions that is predict the user action and stores in the database and modifies the webpage.

V. RESULTS AND DISCUSSION

1To simplify the solution space, we apply the same dimensionality for user embedding, page embedding, and depth embedding. Varying the dimensionality of the embedding layers also change the dimensionality of the interactions.

VI.CONCLUSION

Digital publishers and advertisers are interested to predict how likely it is that a user will stay at a page depth for at least a certain dwell time, defined as webpage depth viewability. Viewability prediction can maximize publishers' ad revenue and boost advertisers' return on investment. This project presented four deep sequential neural networks based on Recurrent Neural Network (RNN) with the Long Short-Term Memory (LSTM). The proposed models predict the viewability and exact dwell time for any page depth in a specific page view. Using a real-world dataset, the experiments consistently show our models outperforming the comparison models.

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