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**PROBABILISTIC MODELS FOR AD
VIEWABILITY PREDICTION ON
THE WEB**

ABSTRACT

- Online display advertising has become a billion-dollar industry, and it keeps growing.
- Advertisers attempt to send marketing messages to attract potential customers via graphic banner ads on publishers' webpages. Advertisers are charged for each view of a page that delivers their display ads.
- However, recent studies have discovered that more than half of the ads are never shown on users' screens due to insufficient scrolling.
- Thus, advertisers waste a great amount of money on these ads that do not bring any return on investment. Given this situation, the Interactive Advertising Bureau calls for a shift toward charging by viewable impression.



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- We propose a unique perspective to achieve this goal, which is quantifying user vitality by analyzing the dynamic interactions among users on social networks. Examples of social network include but are not limited to social networks in micro blog sites and academics collaboration networks.
- If a user has many interactions with his friends within a time period and most of his friends do not have many interactions with their friends simultaneously,
- Based on this idea, we develop quantitative measurements for user vitality and propose our first algorithm for ranking users based vitality. Also we further consider the mutual influence between users while computing the vitality measurements and propose the second ranking algorithm, which computes user vitality in an iterative way.



EXISTING SYSTEM

- However, recent studies have discovered that more than half of the ads are never shown on users' screens due to insufficient scrolling. Thus, advertisers waste a great amount of money on these ads that do not bring any return on investment.
- Given this situation, the Interactive Advertising Bureau calls for a shift toward charging by viewable impression, i.e., charge for ads that are viewed by users. With this new pricing model, it is helpful to predict the viewability of an ad.
- This paper proposes two probabilistic latent class models (PLC) that predict the viewability of any given scroll depth for a user-page pair.
- Using a real-life dataset from a large publisher, the experiments demonstrate that our models outperform comparison systems.



DISADVANTAGE

- To address this problem, another pricing model, which pays ads by the number of impressions that a publisher has served, has become popular in the display advertising market.
- The scroll depth is the percentage of a webpage content vertically scrolled by a user.
- The maximum scroll depth of a page view is how far down the page the user has scrolled during that view. The maximum scroll depth that a user u will scroll on a webpage a is denoted as x_{ua} .
- The target scroll depth, denoted as x , is the page depth whose viewability an advertiser or publisher wants to predict.



PROPOSE SYSTEM

- This paper proposes two probabilistic latent class models (PLC) that predict the viewability of any given scroll depth for a user-page pair.
- Using areal-life dataset from a large publisher, the experiments demonstrate that our models outperform comparison systems.
- We compare the performance of the proposed models (PLC const and PLC dyn) with several other systems:
- Recently, there is growing interest by advertisers to use online display ads to raise brand awareness and to promote the visibility of companies and their products.
- Indeed, users like to purchase products from the brands that they recognize and trust.



ADVANTAGES

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SOFTWARE REQUIREMENT

○ **HARDWARE REQUIREMENT:**

- System : Pentium IV 2.4 GHz.
- Hard Disk : 40 GB.
- Floppy Drive : 1.44 Mb.
- Monitor : 15 VGA Colour.
- Mouse : Sony.
- Ram : 512 Mb.

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- **SOFTWARE REQUIREMENT:**

- Operating system : Windows XP.
- Coding Language : ASP. Net with C#
- Data Base : SQL Server 2005.

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CONCLUSION

- To the best of our knowledge, our research is the first to study the problem of predicting the viewability probability for a given scroll depth and a user/webpage pair.
- Solving this issue can benefit online advertisers to allow them to invest more effectively in advertising and can benefit publishers to increase their revenue.
- We presented two PLC models, i.e., PLC with constant memberships and PLC with dynamic memberships, that can predict the viewability for any givenscroll depth where an ad may be placed.

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