

First Workshop on Targeting and Ranking for Online Advertising

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ABSTRACT

Online advertising is a rapidly growing, multi-billion dollar industry. It has become a significant element of the Web browsing experience. Ad platforms used for ad selection use sophisticated targeting and ranking algorithms with the dual aim of maximizing revenue while providing a superior user experience. As a result, advertising optimization is a very complex research problem, since it combines relevance with user interaction models, advertiser valuations, and commercial constraints. Online advertising integrates a number of core research areas: machine learning, data mining, search, auction theory, and user modeling.

This workshop is intended to serve as an open forum for discussion of new ideas and current research in the field of online advertising. The primary goal is to promote a community of researchers interested in this area and yield future collaboration and exchanges. The research included will address problems faced by all the participants in the online advertising process: advertisers, end-users, advertising platforms and web publishers.

Categories and Subject Descriptors

H.4.m [Information Systems Applications]: Miscellaneous

General Terms

Algorithms, Experimentation, Measurements

Keywords

Online Advertising, Targeting, Ranking of Online Advertising

1. INTRODUCTION

Web advertising supports a large segment of today's Internet ecosystem. The total internet advertiser spend in 2007 is estimated at almost \$20 billion dollars with a growth rate of almost 20% year over year¹. Web advertising spans Web technology, sociology, law, and economics. It has already surpassed some traditional mass media like broadcast radio and it is the economic engine that drives Web development.

¹<http://www.emarketer.com/Article.aspx?id=1004635>

It has become a fundamental part of the web eco-system and touches the way content is created, shared, and disseminated - all the way from static html pages to more dynamic content such as blogs and podcasts, to social media such as discussion boards and tags on shared photographs. Today, all major search engines and the a large portion of web sites exhibit some form of online advertising; online advertising has become a very significant element of the Web browsing experience. This revolution promises to fundamentally change both the media and the advertising businesses over the next few years, altering a \$300 billion economic landscape.

As in classic advertising, in terms of goals, web advertising can be split into *brand advertising* whose goal is to create a distinct favorable image for the advertiser's product, and direct-marketing advertising that involves a "direct response": buy, subscribe, vote, donate, etc, now or soon. In terms of delivery, there are two major types:

1. *Search advertising* refers to the ads displayed alongside the "organic" results on the pages of the Internet search engines. This type of advertising is mostly direct marketing and supports a variety of retailers from large to small, including micro-retailers that cover specialized niche markets.

2. *Content advertising* refers to ads displayed alongside some publisher produced content, akin to traditional ads displayed in newspapers. It includes both brand advertising and direct marketing. Today, almost all non-transactional web sites rely on revenue from content advertising. This type of advertising supports sites that range from individual bloggers and small community pages, to the web sites of major newspapers. There would have been a lot less to read on the web without this model!

A key advantage of the Web advertising is that it is easy to track the feedback of the users in form of clicks or other interaction with the advertisements. Furthermore, online advertising allows sophisticated ad targeting and ranking algorithms with the dual aim of maximizing revenue while providing a superior user experience. As a result, advertising optimization is a very complex research problem, since it combines relevance with user interaction models, advertiser valuations, and commercial constraints. Online advertising platforms require scalable implementations of many machine learning and data mining techniques combined with serving architectures capable of ad ranking in a few hundreds of milliseconds, billions of times per day.

There are parallels between advertisement ranking and search result ranking, but there are also core differences and new areas of research. For example, ads should be matched

to the commercial intent of the users rather than to their information needs. Another difference is that ads are short snippets of text with very much condensed information with specific linguistic features. Searching this type of documents is different than most of the text and web search scenarios. Finally, in contrast with the web search where the engine always shows the top results, ads are not required, and ad search engines can decide to return fewer ads, or no ads at all. These are only a few illustrative examples, we believe that the ad search and ranking problem has enough specificity that a forum is needed to explore and discuss these.

2. THEME AND TOPICS

The workshop is intended to cover a wide range of topics on online advertising, with a focus on research on targeting and ranking of relevant advertisements. The research should address problems faced by advertiser, end-users, advertising platforms, and the market. The topics range across the following themes:

- Ad relevance evaluation
- Query expansion
rewrite
augmentation for improved ad selection
- Semantic ad relevance improvements
- Personalization of ads
- User intent evaluation (including: commercial intent detection)
- Measures and metrics for online advertising
- Ad ranking, return on investment, and yield optimization techniques
- Web content analysis for ad selection (keyword extraction, categorization, and summarization)
- Behavioral targeting and retargeting for online advertising
- Detection of ad aggregator and spam advertisers
- Fraud and low quality traffic detection
- Video advertising and interactive ad formats
- Optimization for guaranteed delivery advertising
- Forecasting of click rates and impressions
- Advertising system performance and scaling
- Data sources for research
- Advertising in faceted search and category based ads
- Preserving user, advertiser and publisher privacy
- New auction and business models for online advertising