

B20.3136.W1: Search and the New Economy

(Updated on October 22, 2007)

Winter 08

Prof. Panos Ipeirotis

Scheduling: Tuesday Jan 29 (6-9pm), Thursday Jan 31 (6-9pm)
Sunday Feb 3 (9am-4pm)
Tuesday Feb 5 (6-9pm), Thursday Feb 7 (6-9pm)

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Course Overview

The emergence of search engines over the last decade changed drastically the business landscape in many industries. Traditional business models are now completely outdated, other business models are deeply transformed, and many new models emerge now, which are based on the unprecedented access to vast amounts of information. In particular, this course will examine how search technologies affect business and society. Students will first gain an understanding of the basics of how search engines work, and then explore topics such as search ranking, spam and anti-spam efforts, search engine marketing, keyword auctions, collective intelligence, search and privacy, intellectual property, and search of blogs and online communities.

Schedule:

Session	Date	Module	Topic
1	Jan 29	Basics of Web Search Engines	Introduction, Search Basics: Crawling, Indexing, Ranking Pagerank, Spam, TrustRank
2	Jan 29	Search Engine Marketing	Analyzing and Understanding Users's Behavior, Web Analytics
3	Jan 31	Search Engine Marketing	Search Engine Marketing and Optimization
4	Jan 31	Search Engine Marketing	AdWords, AdSense, Click Fraud
5	Feb 3	Social Search and Collective Intelligence	Blog Analysis and Aggregation, Network Analysis, Opinion Mining
6	Feb 3	Social Search and Collective Intelligence	Recommender Systems, Reputation Systems,
7	Feb 3	Social Search and Collective Intelligence	Prediction Markets
8	Feb 3	Social Search and Collective Intelligence	Wikis and Collaborative Production
9	Feb 5	Ownership of Electronic Data	Privacy on the Web
10	Feb 5	Ownership of Electronic Data	Intellectual Property issues on the Web
11	Feb 7	Next-Generation Services	Video and Multimedia Search
12	Feb 7	Next-Generation Services	Future Directions and Wrapping-up

Search and the New Economy

The Class

The format of the class will be 50% lecture, 30% class discussion, and 20% discussion of the projects. Students are expected to actively engage in class discussions, to have their assumptions challenged, and to bring their various backgrounds to class in order to make it a great experience for themselves and everybody else.

Assignments and Grading

Grading will be done on the basis of:

- Assignments (50%)
- Class and Blackboard Discussion (20%)
- Final Take-Home Exam (30%)
- (Optional) Instead of the take-home exam, you can propose a project

I am actively looking for your feedback on this course. Please feel free to share your comments anonymously on the Discussion Board or just talk to me informally. I will also collect more feedback in class.

Assignments

Most of the assignments of this course will be hands-on, giving you real life experience of web analytics, search marketing campaigns, recommendation systems, and so on. All assignments will be accessible and doable by students without any programming background. You should be able though to analyze large data sets, either by using Excel, or Access, or some other data analysis tool. Some sample assignments for this course:

- Run and optimize an online advertising campaign, using Google AdWords or Microsoft adCenter
- Analyze the visitorship data of an online website to analyze the effectiveness of different pages. You can use Google Analytics, or tools like CrazyEgg
- Analyze (or build) a recommender system for movies, books, and TV Shows using Facebook data
- Build prediction markets at Inkling Markets, for an event of interest, examine the accuracy of the predictions, and analyze the behavior of the participants. Alternatively, analyze real-money prediction markets at InTrade and BetFair and examine the effect of real-life events in political campaigns.
- Use Google Trends to build a predictor of unemployment measures
- Optimize the keyword campaign of a company by choosing the appropriate keywords and bid amounts, depending on the competition and the rank of the organic pages.

Readings and Textbook

There is no single textbook for this course. The material is very recent and draws from several disciplines such as computer science, economics, statistics, marketing, and sociology. For some of the material that we cover, the only material available comes from research articles. For other topics, there are books that are useful study companions. Some books with material relevant to this course:

- The Search, by John Batelle
- The Long Tail, by Chris Anderson
- Web Analytics: An Hour a Day, by Avinash Kaushik
- The Online Advertising Playbook, by Joe Plummer, Steve Rappaport, Raddy Hall, and Robert Barocci