INFO-GB.3339
Being Digital: Search, Social Media and Crowdsourcing
Winter 2013
Prof. Yannis Bakos

PRELIMINARY COURSE SYLLABUS [October 15, 2012]

Schedule: Monday/Wednesday/Saturday in Winter 2013, beginning January 7, 2013
Classroom: TBA
Instructor: Prof. Yannis Bakos
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Concentrations:
  This course is a full-semester replacement of INFO-GB.3136 (B20.3136) Search and the New Economy, which was approved for the Business Analytics, Digital Marketing and Entertainment, Media and Technology concentrations. The course was just approved in mid-October, and as a result is not listed in any concentrations yet, but we have already applied for it to replace the “Search and the New Economy” course in the above concentrations, which we fully expect will happen before the Spring semester.

Course Overview
  The emergence of search engines, social media and “collective intelligence” technologies such as crowdsourcing drastically changed the business landscape in many industries over the last decade. Some traditional business models are now outdated, others have been deeply transformed, and many new models are emerging based on the unprecedented access to vast amounts of information enjoyed by the participants in today's markets.

  This course examines how search, social media and collective intelligence technologies affect business, with a particular emphasis on business growth. Students will first gain an understanding of the basics of how these technologies work, and then explore topics such as search ranking, search spam and anti-spam efforts, search engine marketing, keyword auctions, online advertising, collective intelligence, search and privacy, intellectual property, and search of blogs and online communities. Some of the topics that we will discuss:

  • How search engines discover and rank web pages
  • How users interact with a web site, and how to identify problems and opportunities by analyzing that behavior
  • The basics of search engine marketing, the process of keyword-based advertising, and the way that advertisement distribution networks work
  • How to harness the wisdom of crowds and what makes a "Web 2.0"-style approach successful.
  • How the ideas of privacy and intellectual property affect and are affected by search engine technologies
  • The trends for next-generation web search and online advertising.
  • Coordinating online workers and taking advantage of crowdsourcing platforms like Amazon Mechanical Turk and oDesk.
THIS COURSE WILL HAVE A VERY LARGE HANDS-ON COMPONENT: 80% of the grade will be determined based on the individual and group assignments (see below for details). Before registering for this course, make sure you understand and are able to handle the requirement to complete these assignments.

Class Format
The format of the class will be 60% lecture, 30% class discussion, and 10% 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.

Preliminary List of Topics:
1. Introduction to Consumer Search, Search in Markets, The Long Tail
2. Search Basics: Crawling, Indexing, Ranking Pagerank, Spam, TrustRank
3. Analyzing Internal Web Traffic
4. Using online data for competitive intelligence
5. Online Advertising, Pay-Per-Click, Search Advertising, AdWords, AdSense
6. Search Engine Analytics, Search Engine Optimization
7. Mining User Generated Content: Sentiment Analysis, reviews, wikis
8. Social Media, Social Search
9. Tracking Social Online Trends, Buzz Tracking
10. Harnessing the Wisdom of Crowds, Recommender Systems
11. Collective Intelligence: Crowdsourcing problem solutions, activities and work.
12. Managing Online Workers
13. Reputation, Prediction Markets and Enterprise Applications
15. Search, Social Media and Privacy
16. Future Directions and Wrapping Up

Grading
Grading will be based on:
- Assignments (80%)
- Class Participation and Discussion (20%)
- No exams
Absences are highly discouraged and will affect negatively your grade. If you have to miss a class, please notify the instructor beforehand.

Assignments
I am currently planning to have four individual assignments and two group assignments that will be done in teams of 2 students. You can use the respective Blackboard discussion board for finding teammates. All team members will be assigned the same grade for the group assignments. Unless I am told otherwise, I will assume that everyone contributes equally to the
project. If this is not the case and to avoid free-riding, if you think that a team member did not work enough you can submit a peer evaluation form evaluating the performance of your teammates. **The above number of assignments is tentative and thus may change.**

Most of the assignments of this course will be hands-on, giving you real life experience of web analytics, data analysis, search marketing campaigns, and so on. The assignments do not require any programming background. **However you should be able to analyze data using Excel.** For one of your individual assignments it is strongly recommended that you use Pivot Tables in Excel. **If you are not familiar with Excel Pivot Tables, you should be prepared to learn how to use this feature** (at a basic level that can be acquired in a couple of hours by reading the relevant documentation). In addition, your completion of the team assignments will benefit (and will be more interesting) if the team has access to a website where it can collect and analyze Google Analytics information and where it can drive users via search advertising campaign(s).

Some sample assignments for this course:

- Run and optimize an online advertising campaign, using Google AdWords.
- Analyze the visitorship data of an online website to analyze the effectiveness of different pages. You can use Google Analytics, or tools like CrazyEgg.
- 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.
- Analyze (or build) a recommender system for movies, books, and TV Shows using Facebook data.
- Create and manage a Crowdsourcing project.

**Readings and Textbook**

There is no textbook for this course. The material is very recent and draws from several disciplines such as computer science, economics, statistics, marketing, and sociology.

I will make every effort to make the material self-contained in the slides that will be distributed as handouts in-class and will also be available on Blackboard. I will also provide pointers to additional, supplementary readings.

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.

**Class Participation**

The class participation grade will be based on a careful, subjective assessment of the value of your input to classroom learning. We keep track of your contributions towards each class session, and these contributions can include (but are not restricted to) raising questions that make your classmates think, providing imaginative yet relevant analysis of a situation, contributing background or a perspective on a classroom topic that enhances its discussion, and simply answering questions raised in class. Emphasis is placed on the quality of your contribution, rather than merely on its quantity. A lack of preparation, non-constructive classroom comments or improper behavior (such as talking to each other or inappropriate use of your computer) will lower this grade.

**Academic Honor Code**

You are responsible for maintaining Stern’s Honor Code which mandates zero tolerance for cheating and plagiarism. Violations of the honor code will be prosecuted with a minimum penalty of failure for the course. If you become aware of any violations of the honor code you must take whatever steps are necessary to stop the violators. When submitting assignments, you will be asked to confirm that you have adhered to the honor code by agreeing to the statement: ‘I
pledge my honor that I have not violated the Stern Honor Code in the completion of this assignment.’ It is in your best interest that the market place knows that Stern takes honesty seriously as it adds to the value of your degree.