Introduction to Computational Advertising

MS&E 239
Stanford University
Autumn 2011
Instructors: Andrei Broder and Vanja Josifovski
General course info

- Course Website: [http://www.stanford.edu/class/msande239/](http://www.stanford.edu/class/msande239/)
- TA: Krishnamurthy Iyer
  - Office hours: Tuesdays 6:00pm-7:30pm, Huang
- Course email lists
  - Staff: [msande239-aut1112-staff](mailto:msande239-aut1112-staff)
  - All: [msande239-aut1112-students](mailto:msande239-aut1112-students)
  - Please use the staff list to communicate with the staff
- Lectures: 10am ~ 12:30pm Fridays in HP
- Office Hours:
  - After class
  - Andrei and Vanja will be on campus for 2 times each to meet and discuss with students. Feel free to come and chat about even issues that go beyond the class.
Instructor

• Dr. Andrei Broder
  • Fellow and Vice President for Search and Computational Advertising in Yahoo! Research
  • Chief Scientist of Yahoo’s Advertising Technology and Search Groups
  • Research interests: computational advertising, web search, context-driven information supply, and randomized algorithms
  • B. Sc. Summa cum Laude from the Technion, M.Sc. and Ph.D. in Computer Science at Stanford University under Don Knuth
    • broder@yahoo-inc.com
    • http://research.yahoo.com/Andrei_Broder
Instructor

- Dr. Vanja Josifovski
  - Senior Director at Yahoo! Research
  - Research Area: Computational Advertising, Search
  - Previously at IBM Research working on databases and enterprise search
  - M.Sc. from University of Florida, PhD from Linkopings University in Sweden
    - vanjaj@yahoo-inc.com
    - http://research.yahoo.com/Vanja_Josifovski
Disclaimers

- This talk presents the opinions of the authors. It does not necessarily reflect the views of Yahoo! inc or any other entity.
- Algorithms, techniques, features, etc mentioned here might or might not be in use by Yahoo! or any other company.
- These lectures benefitted from the contributions of many colleagues and co-authors at Yahoo! and elsewhere. Their help is gratefully acknowledged.
Course Overview (subject to change)

1. 09/30 Overview and Introduction
2. 10/07 Marketplace and Economics
3. 10/14 Textual Advertising 1: Sponsored Search
4. 10/21 Textual Advertising 2: Contextual Advertising
5. 10/28 Display Advertising 1
6. 11/04 Display Advertising 2
7. 11/11 Targeting
8. 11/18 Recommender Systems
9. 12/02 Mobile, Video and other Emerging Formats
10. 12/09 Project Presentations
Class requirements

- Homework 40%
- Project 40%
- Quizzes 10%
- In-class short presentation 10%
- Active attendance strongly encouraged!
Projects – 40%

- Group assignment
  - Preferred group size is 3
- Start forming groups!
- Project commenced at the second class
- Chose one of two projects
  - Real world online advertising
  - Algorithmic project
Real world advertising project

- Craft a campaign for a real world company
- Find a company that can benefit from online advertising
  - Local business
  - Upcoming company (startup)
- Funding provided ($300)
- Craft campaigns
  - Major search engines
  - Display advertising Facebook/Google/Yahoo/MSFT
  - Smaller outlets that allow for customization/optimization
- Adjust campaign mid flight
- Important to learn something insightful!
- Write report and present at the last lecture (15min)
Algorithmic project

- Implement a small scale similarity search engine
- We provide a dataset based on a real world ad corpus
- Build an inverted index
- Implement two algorithms
- Explore multiple variants of the algorithms
- Write a report and present at the last class (15min)
Homework – 40%

• Total of 3 homework assignments
• Take home, open book one week to finish
• Third assignment to be a take-home, final with problems covering the whole course
• Homework are individual assignments
  • Please do not work together on the homework assignments
  • If you have any questions please contact the staff
Quizzes – 10%

• Total of 2 quizzes
• In class after the break for 10 minutes
• A few short questions covering the salient points from the class
• The goal of the quizzes is to motivate attendance
In-class presentation – 10%

• Every student should participate in a class presentation

• 15 minutes after the break

• Describe the business model and the technology of a given company in the computational advertising field

• Kris, our TA will do a presentation in the next class to demonstrate the format

• Please start forming groups (3-4 people per group), and contact Kris about the scheduling.

• We might need to have 2 presentations in some classes to accommodate for everybody.