CS 498: Computational Advertising	**Fall 2019**
Homework 6	
Handed Out: November 19, 2019	*Due: December* 13, 2019 *11:59 pm*

1 General Instructions

- This assignment is due at 11:59 PM on the due date. We will be using Gradescope for collecting this assignment. The homework MUST be submitted in pdf format on gradescope Contact TAs if you face technical difficulties in submitting the assignment. We shall NOT accept any late submission!
- Please make sure to appropriately map/assign the pages of your submitted pdf to each sub-question listed in the homework outline. Handwritten answers are not acceptable. Name your pdf file as YourNetid-HW6.pdf
- For all questions, you need to explain the logic of your answer/result for every subpart. A result/answer without any explanation will not receive any points.
- It is OK to discuss with your classmates and your TAs regarding the methods, but it is NOT OK to work together or share code. Plagiarism is an academic violation to copy, to include text from other sources, including online sources, without proper citation. To get a better idea of what constitutes plagiarism, consult the CS Honor code (http://cs.illinois.edu/academics/honor-code) on academic integrity violations, including examples, and recommended penalties.There is a zero tolerance policy on academic integrity violations; Any student found to be violating this code will be subject to disciplinary action.
- Please use Piazza if you have questions about the homework. Also feel free to send TAs emails and come to office hours.
- Please find the link to the Ribeiro-Neto paper pdf below [1].

2 Question 1 (2 points)

What are the similarities and differences between identifying ads in the contextual ads case and for web search case?

3 Question 2 (2 points)

What is the difference in click-through rates between contextual ads and web-search ads? Explain!

[1] http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.904.4260&rep=rep1&type=pdf

4 Question 3 (6 points)

Please answer the following questions based on the Ribeiro-Neto paper [1] which was discussed in class.

1. What is the impedance mismatch problem discussed in the paper? Explain!
2. How do you solve the impedance mismatch problem?
3. Consider Figure 8 in the paper. Let us look at the line for **AAK_EXP_H**. We can see that for all values of recall, this method gives the higher precision. From the paper, AAK_EXP_H stands for *match ads and keywords with expanded triggering page, also considering the page pointed by the ad.* Explain why this method gives the highest precision.

5 Question 4 - Behavioral Targeting Exercise using Facebook Ad Manager (10 points)

The question details will be released within a day.

References

[1] Berthier Ribeiro-Neto et al. "Impedance coupling in content-targeted advertising". In: *Proceedings of the 28th annual international ACM SIGIR conference on Research and development in information retrieval*. ACM. 2005, pp. 496–503.