

Question 1

Homophily is a long-observed empirical regularity that friends are similar on a variety of aspects. It is important in behavioral targeting because it gives a prior distribution by gathering the information about what your friends bought. By doing this, we can overcome cold start problem which often occurs in behavioral targeting.

Question 2

1. When users have sufficient behavioral data to characterize themselves, social data can introduce redundancy, or even noise, to the model. For example, if we have sufficient movie data of the users, social data may bring noise to the prediction since that which movies your friends watched do not influence you.
2. Social data is most useful for users without much behavioral information. Because behavioral information cannot tell much about themselves, using their friendship is going to be a strong predictor.
3. Because the influence of race is really huge. If at least one of your friend has clicked on an ad in Hispanic targeting category, the probability that you are Hispanic will be high compared to none of your friends have clicked on any ad.

Question 3

We should focus on both long term and short term interests and take balance between them. Focusing on short term interests is more specific and has a better conversion rate. However, focusing on long term interests is more general and has better coverage.

Question 4

1. For positive aspects, first, ads can have more personalized settings, such as where and when to place ads. Second, advertisers do not need to run the real time bidding, so they save computation resources. For negative aspects, first, advertising based on contract may spend more than advertising based on auction, because they do not pay the market price. Second, the procedure takes longer because it needs many manual intervention.
2. It is negative to vulnerable consumers because they do not have the abilities to filter out fake or exaggerated feeds. That's why we often see news which children spend a lot of money with their parents' credit cards, or elders are scammed for thousands dollars.
3. Facebook should also ban all political ads because we know there are vulnerable groups of consumers from the previous discussion. Using micro-targeting to promote specific

party or candidate can easily motivate those groups, and when that happens, politicians who spend more money and gather more data win the election. Recently, because of presidential election in Taiwan, Google banned all the political ads until the election ends.