AM 115 Final Project Proposal: Modeling Twitter Ads

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Topic

I am an avid user of X (formerly known as Twitter). I am curious, after the lecture on queuing theory and restaurant optimization, about the patterns that emerge from social media companies' advertising.

My central question is: how does Twitter decide how frequently to show users ads, and what is the optimal rate of ads which maximizes revenue while keeping users engaged on the platform?

My secondary questions are: how highly does Twitter value its users monetarily, how highly does it value me, and what rate of ads does Twitter deem optimal for my own use?

Evaluation

I will evaluate my model by comparing its predictions to data found (a) through my own Twitter usage and (b) through internet sources. Specifically, I will use a loss function like mean squared error to quantify the validity of the model's setup and parameters.

Dataset

I will primarily collect my own dataset. I will do so by scrolling through my Twitter for a few long periods of time, tracking the frequency of ads as they appear on my feed. This choice of dataset means my data will be relatively limited, and my project will lean more heavily into developing the actual model itself.

I could extend the dataset either by asking friends to analyze their own social media feeds, or by coding a bot to scroll through Twitter and track the number of ads.

Methods

I will initially be inspired by some of the methods from the maximum wait time at restaurants lecture. Specifically, I will use the concept of the exponential distribution and Poisson processes to develop my model, and the concept of Monte Carlo simulation in order to compare its results to the data.

Questions

None at this time.