First step

Initially we define a vector of possible prices and a vector of possible bid, for example

Price:{1,2,3,4,5,6,7,8,9,10}

Bid:{ 1,2,3,4,5,6,7,8,9,10}

We also define 3 possible classes, for each of them we define some possible conversion rate.

The model:

OR

the price of the product

is the probability that the class will buy the product at a given price j (conversion rate)

the fixed cost

bid

stochastic function depending on the bid (we can for example use an uniform distribution).

time frame we consider.

impression depending on the bid x. Estimated with gaussian process.

The Algorithm

For( every bid)

For(every price)

Choose max OR

2nd step

We would use bandit with delayed feedback algorithm (because the population among youngster, old women and old men using the anti-wrinkle is not even).

(Part 1. Video 8)

Random variables: