

IEOR E4601: Dynamic Pricing and Revenue Management

Lecture 2: Population-level Demand Models

1 Study Guide

By the end of this lecture, you should be able to

1. State some common population-level demand models.
2. Explain the relationship between demand and price in demand models.
3. Brainstorm some advantages and disadvantages of a demand model that you have not seen before.
4. Fit a demand model to data, using regression, with or without regularization.
5. Apply a demand model to find the optimal price.
6. Explain the main tradeoffs in pricing.
7. Explain some advantages and disadvantages of the method for pricing that we covered in lecture.
8. Explain some advantages and disadvantages of price optimization in general.

2 Static-Pricing Assumptions

Discussion: In what ways might the model fail when one more of the above assumptions do not hold?

3 Example Demand Models

Discussion: What is unrealistic about the above models and why? What would you change to make the model more realistic?

4 Static Price Optimization

Discussion: What are some advantages and disadvantages of price optimization? Based on these, in what scenarios would you use price optimization, and in what scenarios would you not?

5 Model Fitting with Least Squares

Discussion: What are some possible pitfalls with this method? What is the impact of the pitfalls? What are some possible remedies?