

# Price Prediction in Skincare

with Advanced  
Machine Learning

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1. Overview
2. Data
3. Modeling
4. Recommendations
5. Next Steps
6. SuperDuper App

A close-up photograph of a person's face, focusing on the eye, nose, and mouth. The skin has a warm, golden-brown tone and is covered in a fine, shimmering texture, likely from a cosmetic product. The person's eyes are closed, and their lips are slightly parted. The image is framed with rounded corners and a white border.

## Overview:

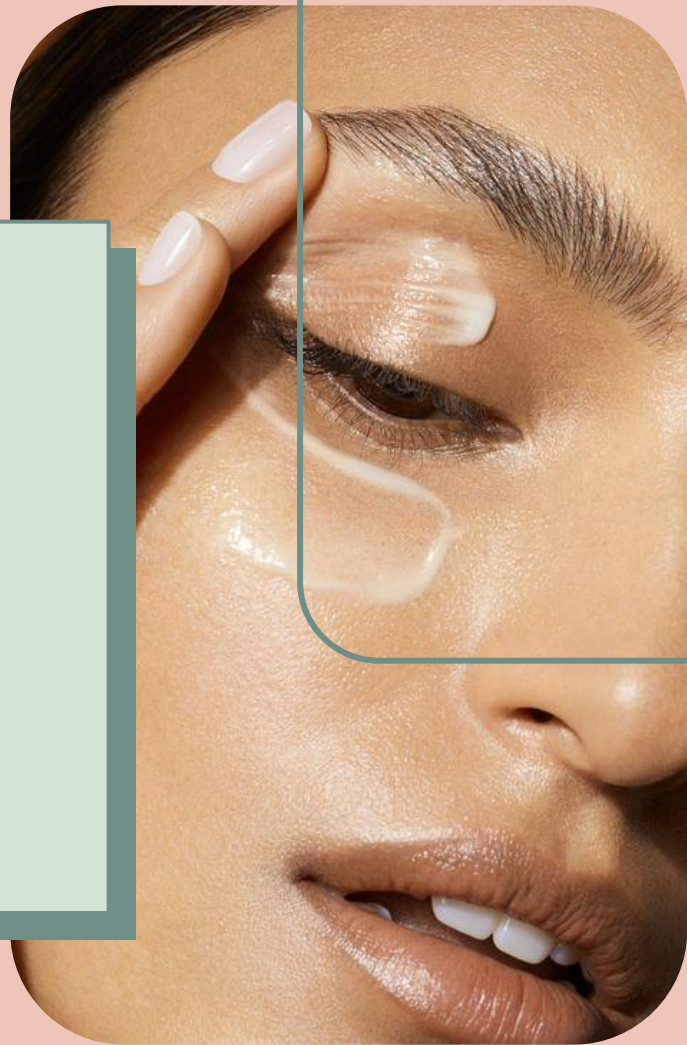
Skincare is a growing industry. Inner Beauty Inc. wants to learn how to price their products to be competitive.

Using neural networks for regression, we can predict prices and dupe products.

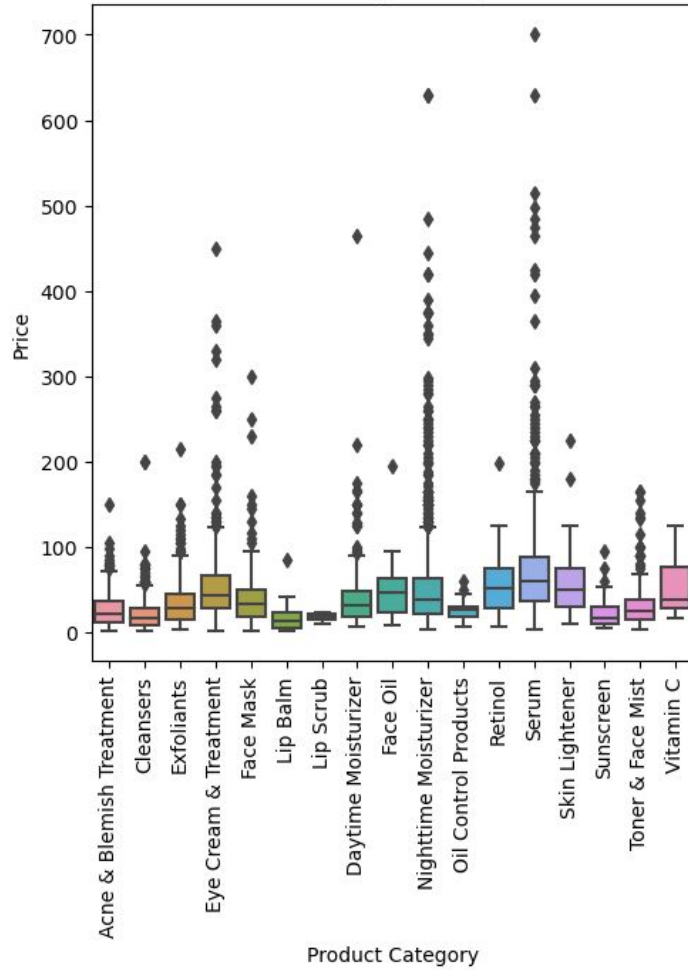
## Data:

The data was scraped from Beautypedia, Paula's Choice, and the Dermstore. Collected by NoxMoon and myself.

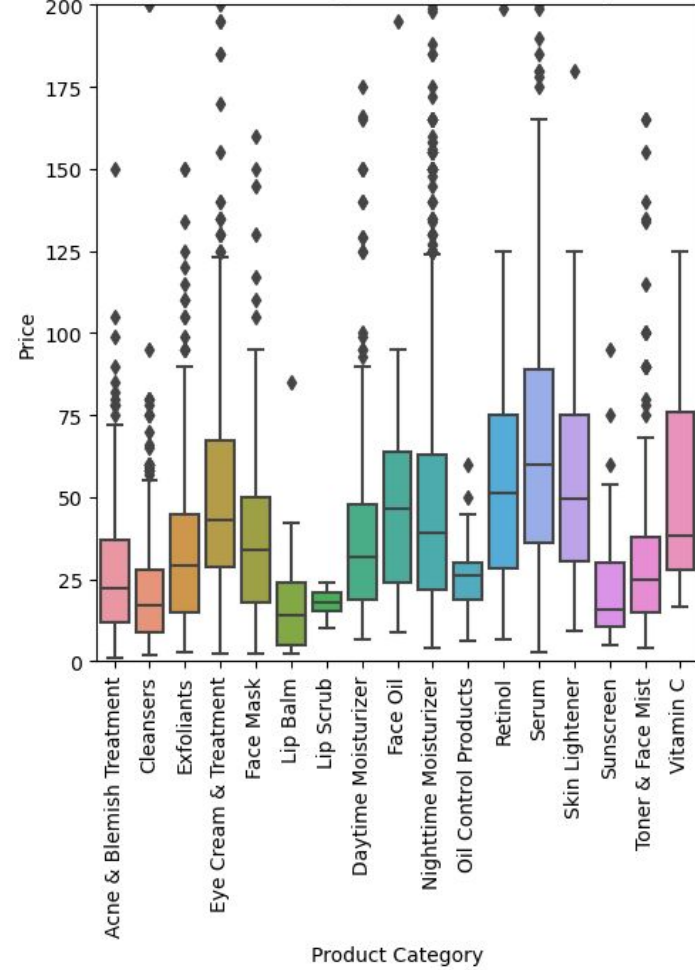
Datasets included price, brand, product name, category, and ingredients.

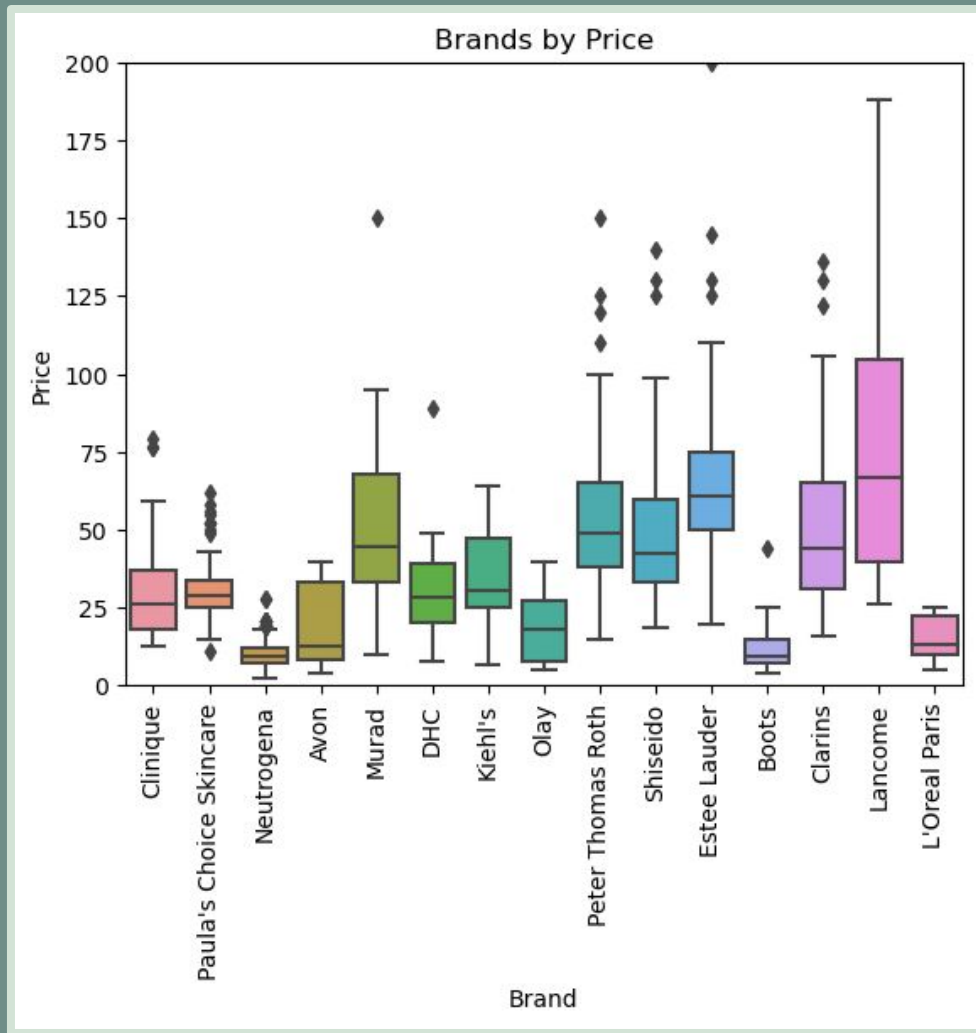


### Product Categories by Price



### Product Categories by Price, Closeup







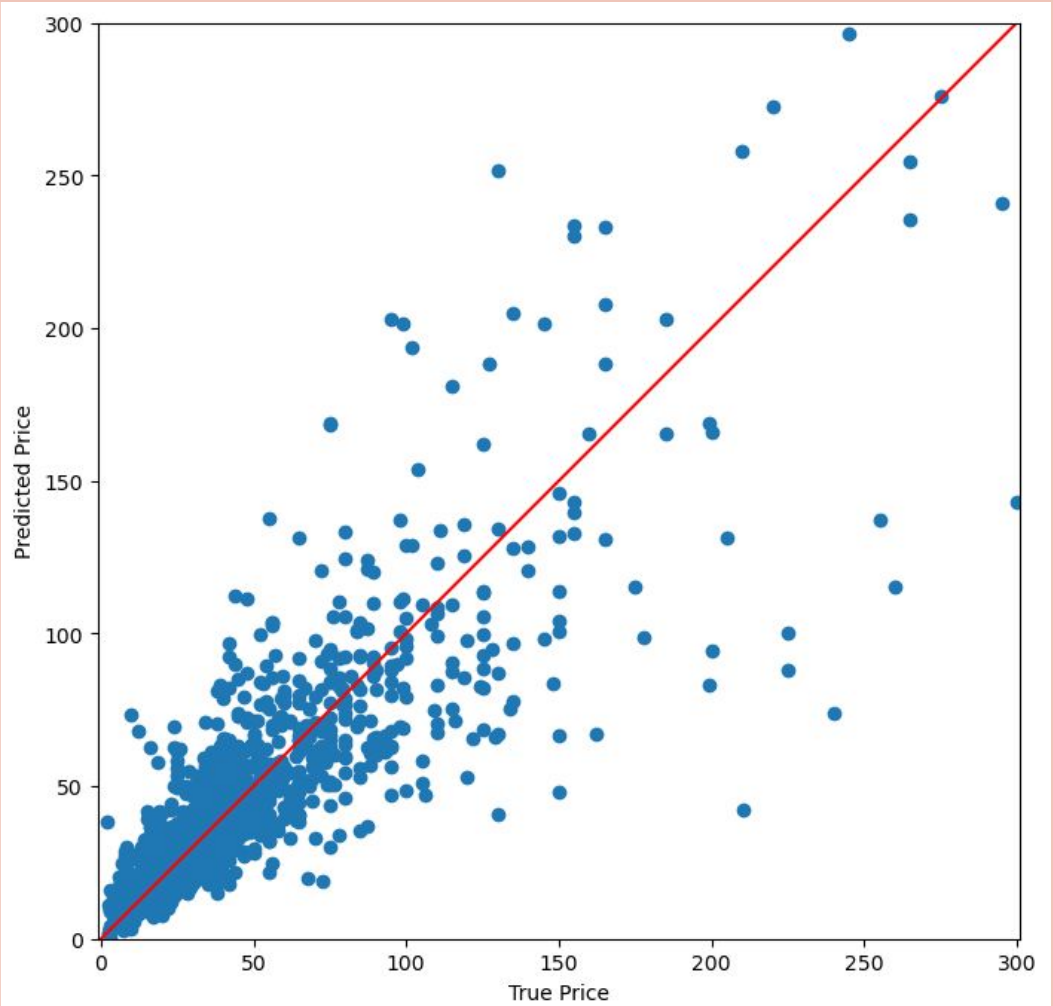
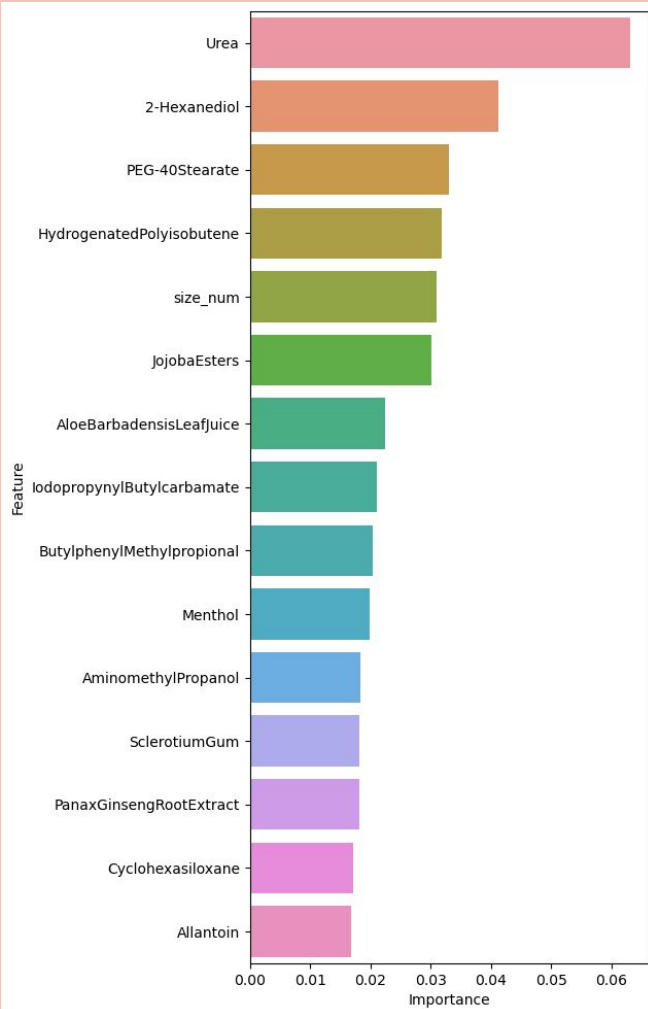
# Modeling

A close-up photograph of a person's face, focusing on the cheek and eye area. A thick, white, irregularly shaped patch of cream or ointment is applied to the cheek, partially covering the eye. The person has dark skin and dark hair.

- XGBoost
- Gridsearch tuned XGBoost
- Neural Networks with 3, 5, and 7 hidden layers

Results:

\$13 test MAE from  
untuned XGBoost







## Recommendations

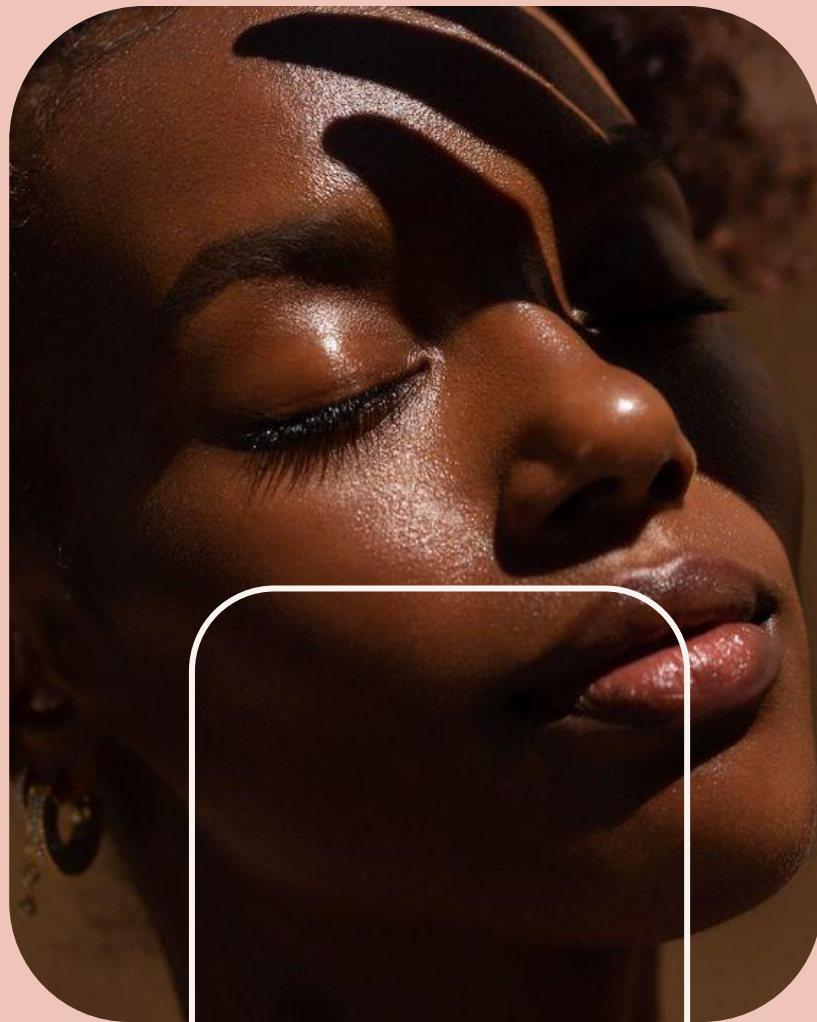
Most overpriced brands: iS Clinical, Clarins, and SK-II.

Most underpriced: Neutrogena, Clinique, and L'Oreal Paris.

Dupe the overpriced, keep prices higher than underpriced.

## Next Steps:

- Determine which product categories to focus on
- Bring packaging into analysis
- Go deeper on ingredients



# SuperDuper App

CLICK  
HERE

## SuperDuper

A duping app for your favorite overpriced skincare product! 🕯



Choose a brand

100% Pure

Now pick a product

100 Pure Green Tea EGCG Concentrate Cream 1.4 fl. oz.

You already found the cheapest product! Well done, you.

# Thank You.

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