



Predicting Customer Satisfaction for Rent the Runway

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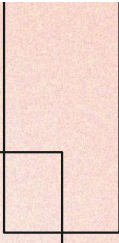


TABLE OF CONTENTS

01 —	02 —	03 —
BACKGROUND AND PROBLEM STATEMENT	DATA COLLECTION AND CLEANING	EXPLORATORY DATA ANALYSIS
04 —	05 —	06 —
FEATURE SELECTION	MODELS	CONCLUSIONS

TABLE OF CONTENTS

01 —	02 —	03 —
BACKGROUND AND PROBLEM STATEMENT	DATA COLLECTION AND CLEANING	EXPLORATORY DATA ANALYSIS
04 —	05 —	06 —
FEATURE SELECTION	MODELS	CONCLUSIONS

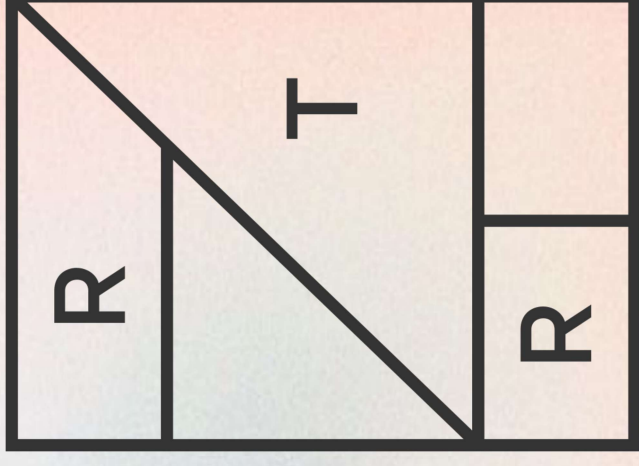
01 BACKGROUND

Rent the Runway is an e-commerce platform that allows users to rent, subscribe, or buy designer apparel and accessories.

It was founded by Jennifer Hyman and Jennifer Fleiss, who launched the company in November 2009.

The membership plans are:

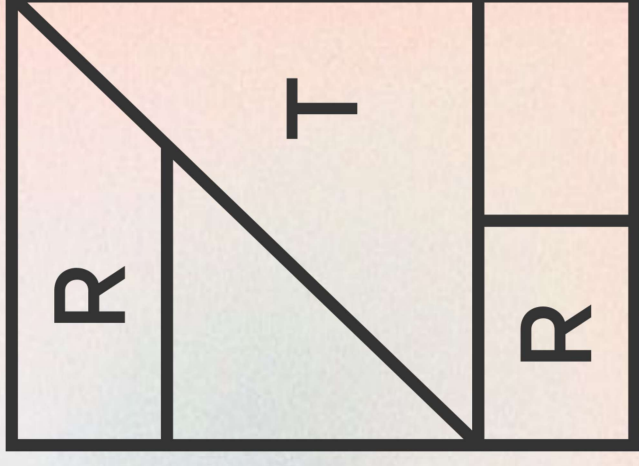
- \$ 94 per month for 4 items
- \$ 144 per month for 8 items
- \$ 235 per month for 16 items



01 BACKGROUND

According to Salesforce Research:

- 33% of Americans say they'll consider switching companies after just a single instance of negative experience.
- If the company's customer service is excellent, 78% of consumers will do business with them again after a mistake.



01 PROBLEM STATEMENT

The customer success department at Rent the Runway would like to use existing feedback, together with customer data, to predict which customers have a higher chance of not being satisfied with their rentals, even if they do not leave a negative review.

Those customers then can be reached directly with “Win Back” promotions to ensure repeat service and a chance for a positive rental experience to take place in the future.



TABLE OF CONTENTS

01	BACKGROUND AND PROBLEM STATEMENT	02	DATA COLLECTION AND CLEANING	03	EXPLORATORY DATA ANALYSIS
04	FEATURE SELECTION	05	MODELS	06	CONCLUSIONS

02 DATA COLLECTION



The website offers 7,980 different dresses. All the data for the dresses was scraped.

Rixo
Multi Printed Holly Dress
\$277 original retail ⓘ
\$30 - \$36 to rent ⓘ

ZIP CODE
20037

SIZE
M / US 8, Regular ▾

FREE BACKUP SIZE
No Thanks ▾

SIZE & FIT

DELIVERY + RETURN DATES
☒ 4-DAY RENTAL
☐ 8-DAY RENTAL

Add To Bag

Product Details
Multi printed silk (100% Silk). Sheath. Sleeveless. Scoop neckline.
55" from shoulder to hemline. Imported.

- Brand of the Dress
- Rental Price of the dress
- Retail price of the dress
- Product Details

02 DATA COLLECTION

Kaleigh
TOP CONTRIBUTOR

SIZE WORN: XSR

OVERALL FIT: TRUE TO SIZE

RENTED FOR: WEDDING

USUALLY WEARS: 4

HEIGHT: 5' 8"

AGE: 30

BUST SIZE: 32A

BODY TYPE: STRAIGHT & NARROW

WEIGHT: 122LBS

★★★★★
(5 out of 5 stars)

OCTOBER 28, 2021

90's Gwen Stefani Moment!

Absolutely loved this body con slip dress. I rented simple because it was so fun and wound up wearing to a sunny fall wedding. The bright plaid pattern is so unique and brought lots of compliments. I totally rent this again and pair with sneakers for a casual vibe.

COMMENT



All the current 208,747 dress reviews were scraped from the website.

- Size of the Rented Garment
- Overall Fit of the Garment
- Rented for What type of Event
- Height of customer
- Age of customer
- Size Usually Worn by Customer
- Bust Size
- Body Type
- Weight of Customer
- The rating (out of 5 stars) the customer left for the dress

02 DATA CLEANING

Clean the mis-entered customer measurements.

Fix typos in the data set.

Example: “sleeves” spelled as : “sleees”, “sleves”, “slevees”,
“slevves”

Turn the product details into features:

Example:

Blue printed cotton (69% Cotton, 27% Nylon, 4% Spandex). Hourglass. Sleeveless. Square Neckline. 45" from shoulder to hemline. Imported.

Dress Style: Hourglass

Sleeves: Sleeveless

Neckline: Square Neckline

TABLE OF CONTENTS

01	BACKGROUND AND PROBLEM STATEMENT	02	DATA COLLECTION AND CLEANING	03	EXPLORATORY DATA ANALYSIS
04	FEATURE SELECTION	05	MODELS	06	CONCLUSIONS

03 REPRESENTATIVE CUSTOMER

Sara is our representative customer.

She is :

36 years old

5'4" and 140 pounds

Size 10

Renting mostly for special occasions like dates, vacations and weddings.



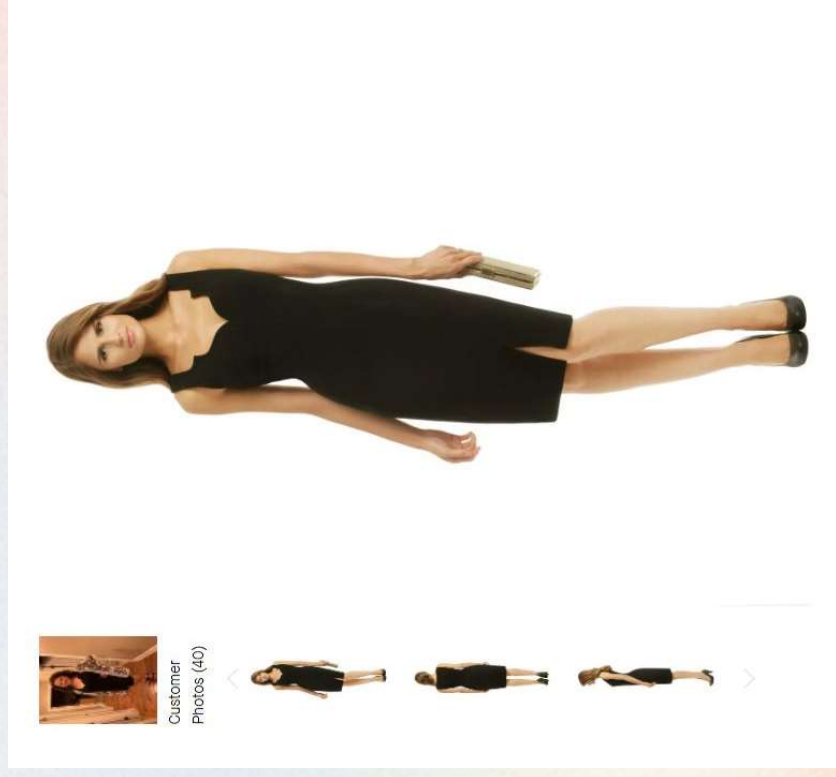
03 REPRESENTATIVE DRESS

Our representative dress is :

Sleeveless

Has a v-neckline

Has an hourglass shape



03 DATA INSIGHTS

About 40% of the rentals were done for work or everyday and 60% were for special events like weddings or vacations.

More joyous events (weddings, vacations, dates) yield higher number of positive ratings than the everyday events.

03 TARGET FEATURE

Break down of Satisfaction Ratings:



Binarize the Satisfaction Ratings:

Satisfied: 83%

Not satisfied: 17%

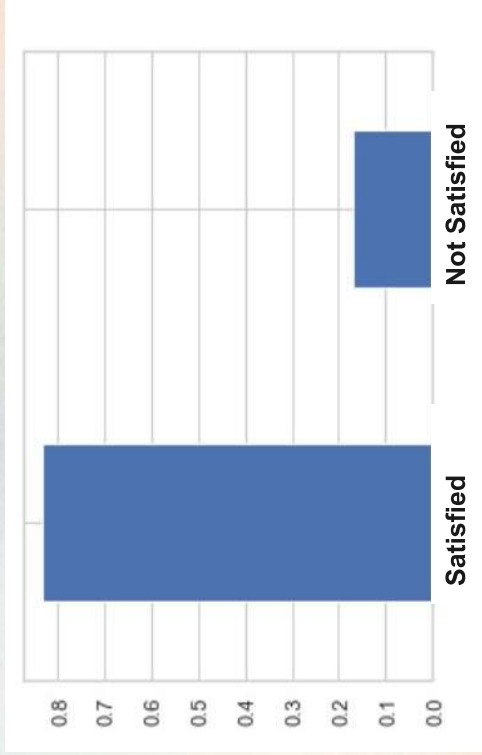


TABLE OF CONTENTS

01	BACKGROUND AND PROBLEM STATEMENT	02	DATA COLLECTION AND CLEANING	03	EXPLORATORY DATA ANALYSIS
04	FEATURE SELECTION	05	MODELS	06	CONCLUSIONS

03 FEATURE SELECTION

Using a Chi Squared test , we selected features that exhibit the most dependence with Customer Satisfaction.

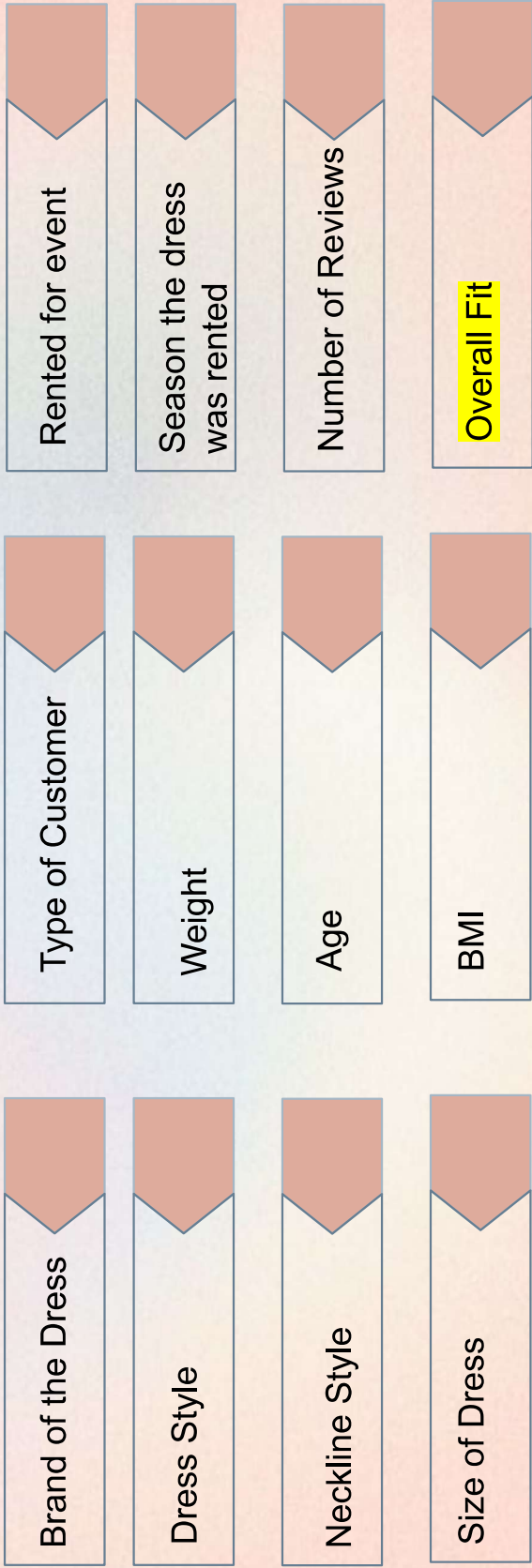


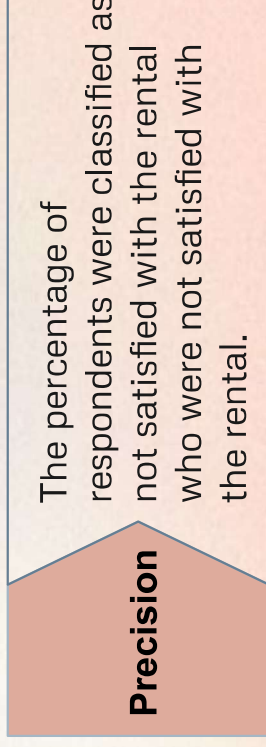
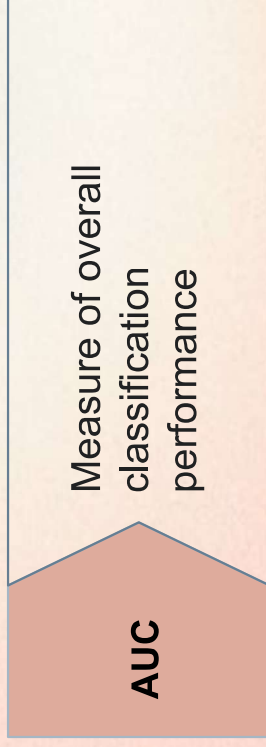
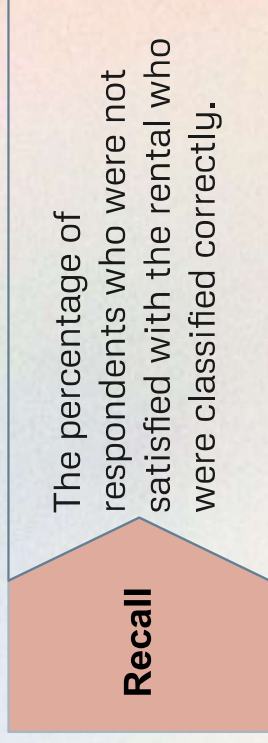
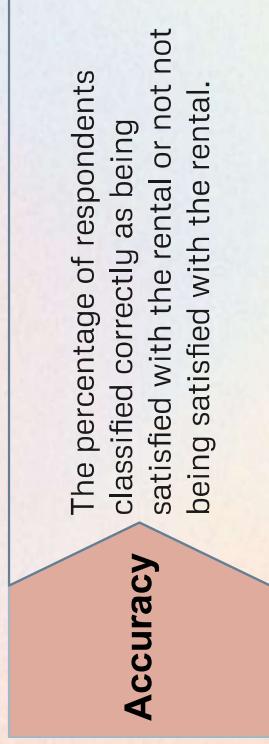
TABLE OF CONTENTS

01	BACKGROUND AND PROBLEM STATEMENT	02	DATA COLLECTION AND CLEANING	03	EXPLORATORY DATA ANALYSIS
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03 OVERVIEW OF APPROACH

Because we are more interested in customers *who are not satisfied with the rental*, we made them our positive class.

1 : Not satisfied with Rental
0 : Satisfied with Rental



05 MODELS

Logistic Regression Model

Accuracy: 0.84
AUC: 0.53
Precision: 0.62
Recall: 0.08

Random Forest Model

Accuracy: 0.87
AUC: 0.66
Precision: 0.73
Recall: 0.35

XGBoost Model

Accuracy: 0.87
AUC: 0.66
Precision: 0.74
Recall: 0.35

Neural Network

Accuracy: 0.87
AUC: 0.87
Precision: 0.62
Recall: 0.76

06 CONCLUSIONS

We set out to use existing product reviews to try to anticipate which customers will not be satisfied with their dress rental.

We built a model that classifies whether a customer will be happy with their dress with 87% accuracy and is able to find 76% of customers who are not satisfied with the purchase.

It is recommended that those customers should be reached out to with a “Win Back” promotion even if they do not leave a negative review.

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Thank you!

Questions or Feedback?