

# Understanding the Customer

# FARFETCH

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Data Science

June 20, 2019

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[github.com/acdlck/farfetch\\_understanding\\_the\\_customer](https://github.com/acdlck/farfetch_understanding_the_customer)

## Online Luxury Retail: The Farfetch Platform and Marketplace



**Over 3,000 Brands**

**Over 190 Countries**

# **The Mission of the Data Science Team**

**Who They Are**

**Understanding the Customer**

**What They Want**

**How to Get Their Attention**

## Who They Are: A Data Science Approach

**16,105 (9,667 Unique) Customer Reviews**

**Pieces Bought**

**Rating**

**Product URL**

**Reviewed By**

**Data Product Inputs**

**Original Price  
Sales Discount**

**Designer**

**Gender**

**Category**

**13,518 Unique Product Details**

**Consumer Journey**

**Touch-Driven Recommender Engine**

**Live Checkpoint for Inventory Stockouts**

**Non-Repeating Rolling Recommendations**

**Synchronization with NoSQL Database**

# A Touch-Driven Recommender Engine

**The Most-Rated  
Individual Products  
3x Recommendations**

**The “Best Nine”  
Most-Rated Subcategories  
9x Recommendations**

**Collaborative Filtering  
Singular Value Decomposition  
Nx Recommendations**

**Unpersonalized**

**Consumer Journey**

**Personalized**

**The “Best One”  
Most-Rated Subcategory  
3x Recommendations**

**Content-Based Similarity  
Pearson Correlation  
3x Recommendations**

## The Most-Rated Individual Products



**Gucci Accessories**  
**15 Product Ratings**



**Buffalo Shoes**  
**13 Product Ratings**



**Adidas Shoes**  
**10 Product Ratings**

## The “Best One” Most-Rated Subcategory



**Adidas Shoes  
8 Product Ratings**



**Adidas Shoes  
5 Product Ratings**



**Adidas Shoes  
5 Product Ratings**

## The “Best Nine” Most-Rated Subcategories

**Adidas  
Bags**

**3  
Subcategory  
Ratings**



**Dolce & Gabbana  
Bags**

**50  
Subcategory  
Ratings**



**Gucci  
Bags**

**78  
Subcategory  
Ratings**



**Adidas  
Clothing**

**83  
Subcategory  
Ratings**



**Dolce & Gabbana  
Clothing**

**205  
Subcategory  
Ratings**



**Gucci  
Clothing**

**52  
Subcategory  
Ratings**



**Adidas  
Shoes**

**375  
Subcategory  
Ratings**



**Dolce & Gabbana  
Shoes**

**131  
Subcategory  
Ratings**



**Gucci  
Shoes**

**153  
Subcategory  
Ratings**





Content-Based Similarity: Pearson Correlation



\$103

Original Price

\$103

50% Off

Discount

50% Off

Men

Gender

Men

Imported

Made In

Imported

Shoes

Category

Shoes

User-Rated Favorite Product

Most-Correlated Product

# User-to-User Collaborative Filtering: Singular Value Decomposition

2,000 x 2,000  
4M Cells

**The Long Tail**  
**User-Product Utility Matrix**

**99.988% Matrix Sparsity**

**9,667 Customers x 13,518 Products**

**RMSE ~ 0.78 Out of 5 Stars**

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The Project Data Stack	
Business Understanding	Brand Management Consumer Journeys
Data Mining & Cleaning	Requests BeautifulSoup
Data Warehousing	JSON NoSQL / MongoDB
Data Exploration Feature Engineering	Python / Numpy Pandas
Predictive Modeling	Surprise / SVD GridSearchCV
Data Visualization	Matplotlib / Seaborn Selenium Webdriver