

Applications: Computer Vision for Fashion

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Overview

- 1 Overview
- 2 Data Science in Fashion
- 3 Computer Vision in Fashion

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Why Fashion?

- Fashion is a \$2.4 Trillion industry worldwide that is growing at about 5.5% per year
- It is the world's 7th largest economy, measured in terms of GDP
- 1000s of brands vying for attention
- Discerning, demanding, unpredictable customers
- Digital transformation is disrupting the industry

Data Science and Machine Learning in Fashion

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Data Science in Fashion

- Recommendation & Personalization

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- Recommendation & Personalization
- Pricing

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- Recommendation & Personalization
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- Fraud & Authentication

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Computer Vision in Fashion

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Computer Vision in Fashion

- Object Detection and Localization/Segmentation

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Computer Vision in Fashion

- Object Detection and Localization/Segmentation
- Visual Search

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Computer Vision in Fashion

- Object Detection and Localization/Segmentation
- Visual Search
- Aspect Extraction

Data Science and Machine Learning in Fashion

Data Science in Fashion

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Computer Vision in Fashion

- Object Detection and Localization/Segmentation
- Visual Search
- Aspect Extraction
- Augmented Reality

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Recommendation Engines for Fashion

- Similar Item Recommendation
- Complementary Item Recommendation

Some factors unique to Fashion

- Brand-awareness
- Price
- Size
- Stylistically coherent recommendations

Similar Items / Related Products Recommendations

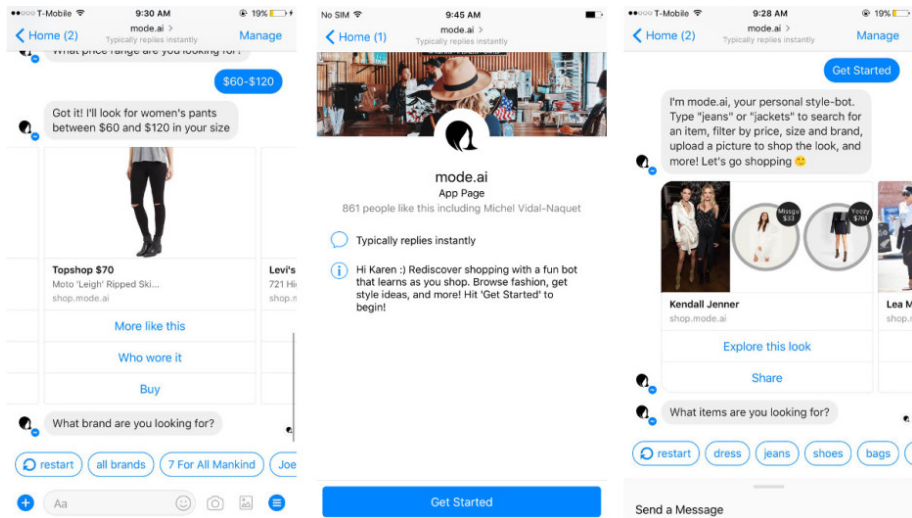


Figure: Source - IPG Media Lab

How do we solve Similar Item Recommendations?

- Co-views
- Brand/Color similarity
- Title/Description/Visual similarity
- Price segmentation

SAVE WITH EVERYDAY LOW PRICES [See all eligible items](#) ▶



Alpine Swiss Duffy Women's Hooded Parka Fur Trim W

1 sold in last hour

Condition: **New with tags**

Size (Women's):

Color:

Quantity: **Limited quantity available**
2,293 sold / See feedback

List price: ~~US \$200.00~~ ⓘ

You save: US \$175.01 (88% off)

Now: **US \$24.99**

Buy It Now

Add to cart

[Add to watch list](#)

[Add to collection](#)

2,293 sold

More than 67% sold

30-day returns

People who viewed this item also viewed

Feedback on our suggestions



SPONSORED
Womens Winter Warm Long
Coat Fur Collar Hooded Jac...

\$25.59
\$31.99
Free shipping



SPONSORED
Women's Motorcycle PU
Leather Jacket Zipper Coat...

\$22.66
\$28.83
Free shipping



SPONSORED
Alpine Swiss Bella Women's
Belted Blazer Button Up Wo...

\$14.99
Free shipping



SPONSORED
Womens Slim Windbreaker
Double Breasted Long Trench...

\$22.99
\$24.20
Free shipping



Alpine Swiss Duffy Women's
Hooded Parka Fur Trim Wool...

\$24.99
\$299.00
Free shipping



Womens Warm Long Coat Fur
Collar Hooded Jacket Slim...

\$16.89
Free shipping

prime student

50% off Prime for College Students.

LEARN MORE

◀ Back to search results for "alpine swiss"



+ alpineswiss

alpineswiss Women's AS709 Duffy Wool Coat Fur Trim Hooded Parka Jacket

★★★★☆ 358 customer reviews

| 31 answered questions

Price: \$48.88 - \$49.99

Fit: As expected (64%) ▾

Size:

Select ▾

[Size Chart](#)

Color: Black



- Wool Blends
- Removable Zippered Collar with Fur Trim Hood
- SEE MEASUREMENTS IN IMAGES & measure against your favorite fitting coat to get your fit right. This Helps avoid Exchanges.
- Gold Accent Zipper and Snaps, Toggle Button Closure
- Superb Design for a Flattering Fit. 2 Outer Pockets Hidden in Seam

Fur-lined hood with a quilted pillow-stitch design.

Customers who viewed this item also bought



iLoveSIA
\$44.99



Stjubleens
\$39.99 - \$43.99

Sponsored products related to this item [\(What's this?\)](#)



alpine swiss Emma
Women's Navy Wool 3/4
Length Double Breasted
Peacoat Small
★★★★☆ 94
\$39.99 ✓prime



Alpine Swiss Stella
Women's Gray Wool Single
Button 7/8 Length
Overcoat XL
★★★★☆ 102
\$34.99 ✓prime



alpine swiss Women's Plus
Size Wool Overcoat Classic
Notch Lapel Walking Coat
Gry 1XL
★★★★☆ 8
\$29.99



Zeagoo Women's Peacoat
Double Breasted Overcoat
Long Sleeve Jacket Black
M
★★★★☆ 14
\$50.49 ✓prime



alpine swiss Emma
Women's Burgundy Wool
3/4 Length Double
Breasted Peacoat Large
★★★★☆ 94
\$39.99 ✓prime



alpine swiss Women's Plus
Size Wool Overcoat Classic
Notch Lapel Walking Coat
Blk 1XL
★★★★☆ 8
\$29.99

Ac

Some Techniques for Complementary Recommendations

- Co-purchases/Co-clicks
- Main-item / Accessory relationships
- Category tree / Taxonomy relationships
- Mining Fashion blogs / Celebrity Styles

10 Simple Ways to Look More Put Together Without Really Trying

FEATURED, OUTFIT IDEAS, STYLE NEWS, WHAT'S TRENDING / March 12, 2018 / By Sarah Wetmore

Home / Featured



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RECENT POSTS



7 Ways to Wear Bright Statement Shades

March 19, 2018



Shoe of the Week:
Alchemia Di Ballin
Booties

March 19, 2018



So Many Reasons to Get
Trench Coats on eBay
Today

March 19, 2018



Brand to Know: Suzanne
Rae

Fashion Recommendation Example Blogs

eBay Style Stories

▶ Style Story

Stylecaster

▶ Stylecaster blog

Fashion Fraud

- Fashion is the most popular product category in Cross-Border trade
- Fluctuating fashion trends and consumer tastes makes differentiating real from fraudulent hard
- High ASP for Fashion products makes fraudulent transactions more attractive
- Fraud on Luxury products is 2X consumer fashion products

Source: [Riskified Blog](#)

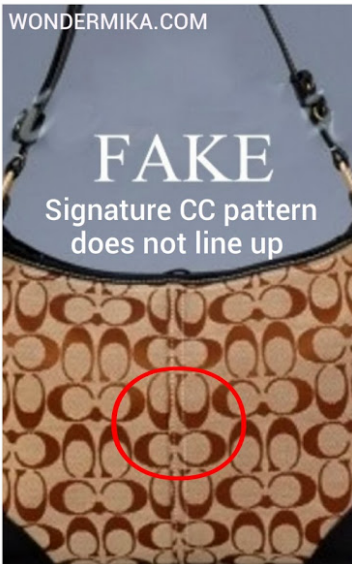


Figure: Source: Wondermika.com

Fraudulent products Identification

- Extreme expertise required
- Logo, Font, Material, Stitching quality
- Anti-fraud features like micro-printing
- Specially trained human verifiers
- Slowly, CV algorithms are stepping in (e.g. [Entrupy](#))

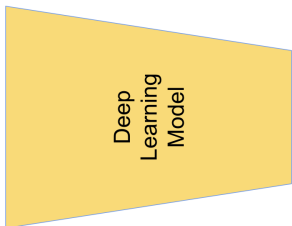
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Computer Vision tasks in Fashion

- Object Detection
- Object Localization
- Aspect Extraction
- Visual Similarity
- Augmented Reality

Object Detection



3.9
0
0.2
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.
5.8










Men's Shoes Athletic
Men's Shoes Boots
Dresses
Chairs
...
Handbags
Earrings
LEGO

Object Localization



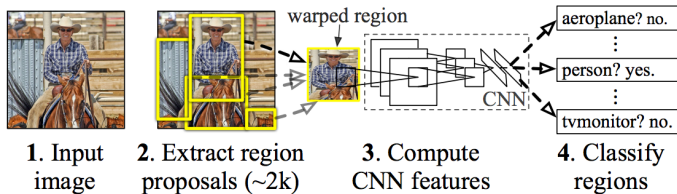
coat sweater scarf suede coat cashmere sweaters wool suede jackets cardigan sweaters cardigan knit

Related products Related images

 <p>JED Women's Turtl... From \$21.34 1 store ★★★★☆</p>	 <p>Cashmere Cardig... From \$227.46 2 stores</p>	 <p>Women's Plus-Size ... From \$15.25 2 stores</p>	 <p>Cable Muffer Scarf ... From \$69.99 1 store</p>	 <p>Vince Camuto Wom... From \$32.42 1 store</p>	 <p>Chic Safelab Steer... From \$32.86 1 store</p>	 <p>Gilet femme col e... From \$39.89 1 store</p>	 <p>MICHAEL Michael K... From \$35.98 2 stores</p>	 <p>Plus size sweater dress Ta... From \$166.00 1 store</p>
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Object Localization

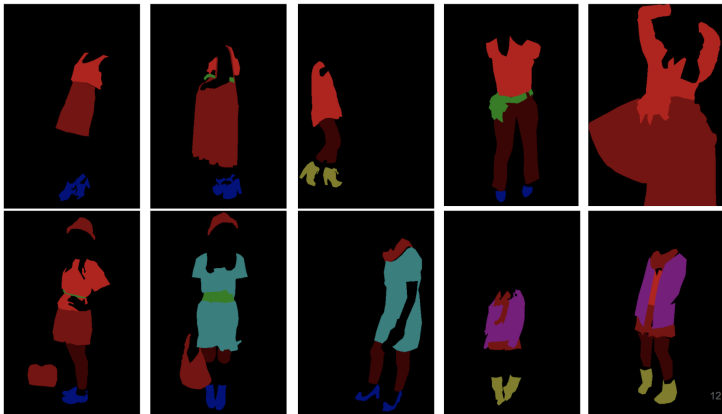
R-CNN: *Regions with CNN features*



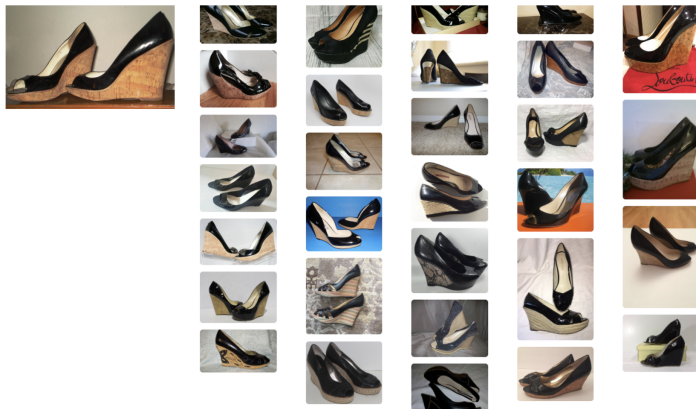
Object Localization



Semantic Segmentation



Visual Similarity



Visual Similarity

