



ADOBE EXPERIENCE MANAGER

AEM GEMS - ML and AI in AEM – Spring 2018

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Agenda

- ML themes in AEM
- Overview of ML features in AEM
- ML features in AEM 6.4 (including technology previews)
- Demos

ML themes

CONTENT VELOCITY

*Accelerate content,
experience, and review velocity*

AI SEARCH AND DISCOVERY

*Employ AI to increase
findability and re-purposing of assets*

ML based features AEM 6.2-6.4


10 ML features

- **Smart Tags**
 - *Deep learning based image tagging*
- **Enhanced Smart Tags**
 - *Adds ability to teach the Smart Tagging feature to recognize your own concepts, for example, logos*
- **Smart Cropping**
 - *Automatically identifies the most important parts of an image and crops appropriately*
- **Smart Swatching**
 - *Automatically identifies best / most representative region of image for color swatch*
- **Machine Translation for search**
 - *Does on-the-fly translation of search queries to support multiple language search*
- **Smart Summarization**
 - *Summarizes a text by identifying the most important sentences.*
- **Expert Scoring**
 - *Identifies experts among community users*
- **Spam detection for communities**
 - *Automatically flags potential spam comments*
- **Smart Forms Conversion (tech preview for AEM 6.4)**
 - *Allows for semi-automation of forms conversion from any format to AEM format using deep learning*
- **Smart Layout (tech preview for AEM 6.4)**
 - *Suggests layouts for different audiences based on KPIs and content understanding*

ML based features AEM 6.4

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Enhanced Smart Tags



test_image1

Basic Advanced IPTC IPTC Extension

Metadata

Title

test_image1

Description

Type

image/jpeg

Language

Tags

Smart Tags (Prediction Confidence 0-100)

wine(75) food(75) glass(75)

bottle(63) drink(63) dinner(63)

Enhanced Smart Tags

Smart Tags



Red (82)

Symbol (77)

Sign (71)

Icon (63)

Enhanced Smart Tags

Smart Tags



Red (82)

Symbol (77)

Sign (71)

Icon (63)



Enhanced Smart Tags



Adobe logo (82)

Red (82)

Symbol (77)

Sign (71)

Icon (63)

Enhanced Smart Tags

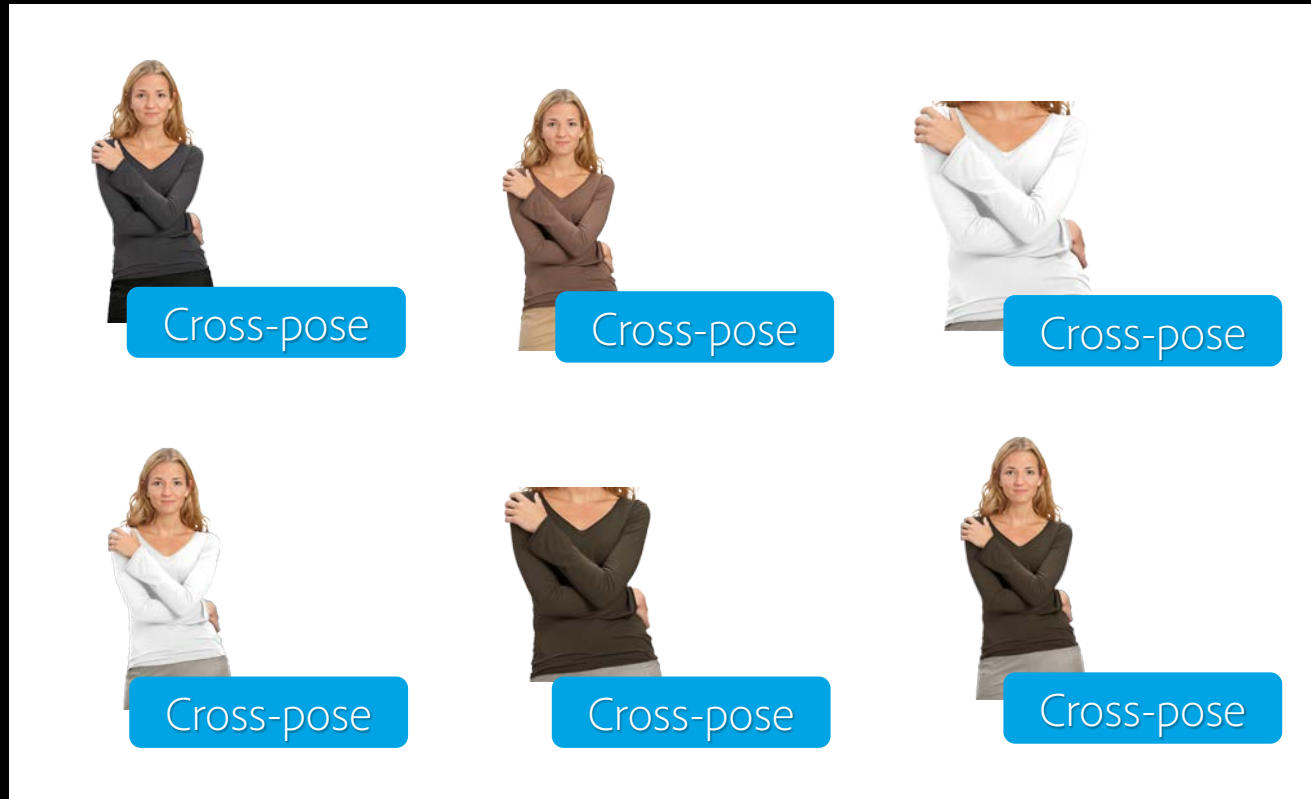
Manually tagged images



Custom Smart Tags uses Adobe Sensei and leverages already existing manual tags to enable tagging that is more relevant and specific to your business

Enhanced Smart Tags

Manually tagged images

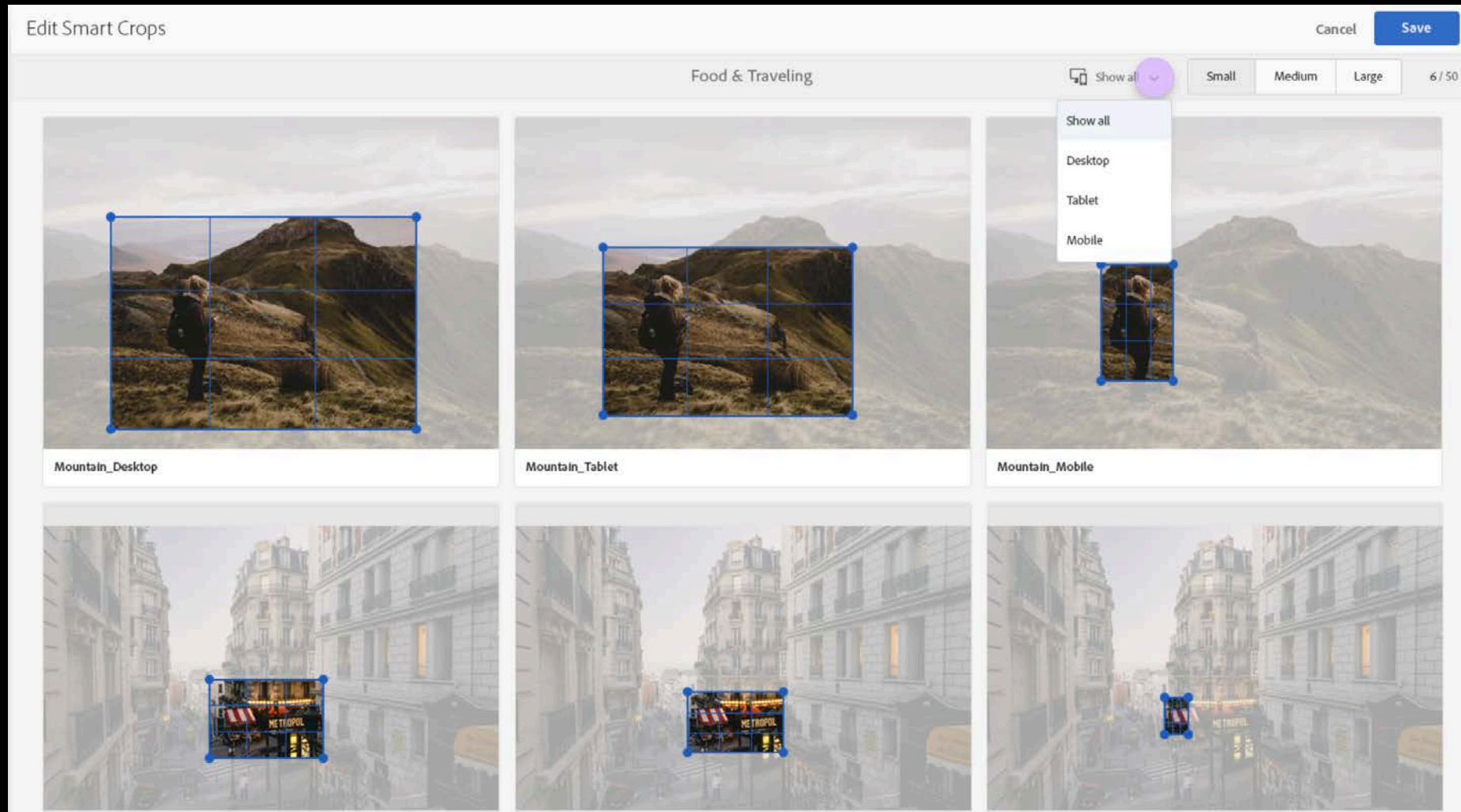


Custom Smart Tags



Custom Smart Tags uses Adobe Sensei and leverages already existing manual tags to enable tagging that is more relevant and specific to your business

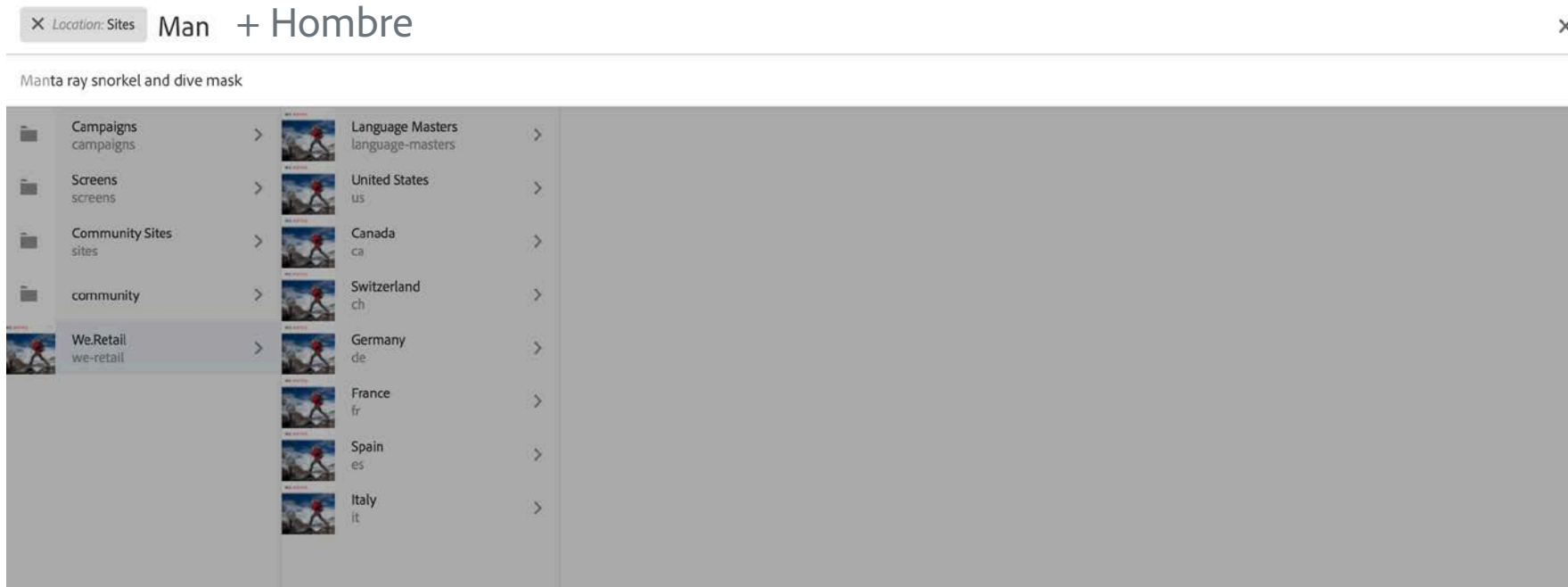
Smart Crop



Smart Swatch



Machine Translation for Search



One-the-fly
translation of search
queries at search
time

Supports more than
50 languages

Smart Forms Conversion (Technology Preview)



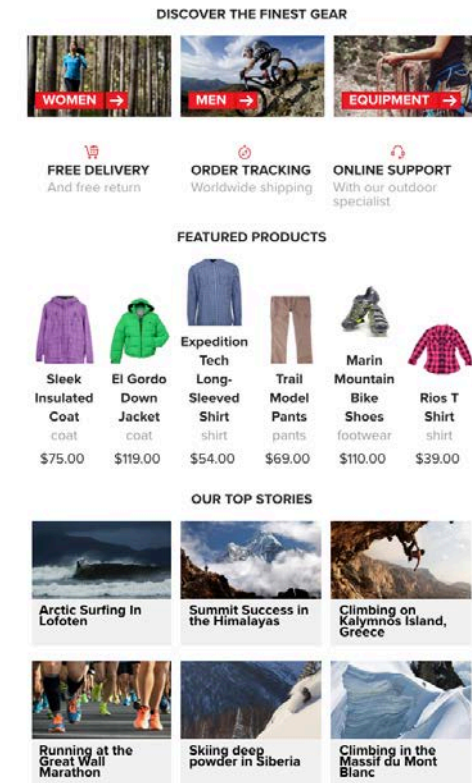
Adobe Sensei



Converting legacy forms into AEM forms format is a real bottleneck

Adobe Sensei automatically identifies AEM components and fields

Smart Layout (Technology Preview)



Determining the order and layout for content pages is a tedious task that is rarely informed by data.

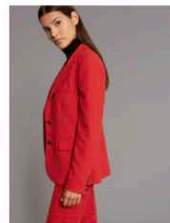
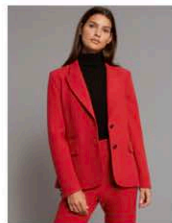
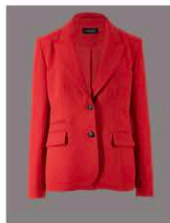
Smart Layout leverages Adobe Analytics data and Adobe Sensei to suggest layouts tailored specifically for different audiences.

QUERY IMAGE



SEARCH RESULTS

Women : Blazers



DEEP PRODUCT SEARCH

Enables search for apparel product images using a query image.

Use Cases

Enables search for apparel using a query image

This supports several use cases:

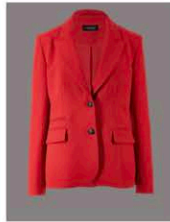
- Select an item and search for similar products
- Identify apparel products in User Generated Content
- Take a photo of an outfit and search for it against product catalog
- Help marketer find products in an image and match them with product catalog to aid in making shoppable banners.

QUERY IMAGE



SEARCH RESULTS

Women : Blazers



DIFFERENT FROM SIMILARITY SEARCH

This technology is different from normal similarity in that it's focused on apparel and allows for much more advanced use cases.

For example, apparel that is shown on a model is visually very different from apparel that's shown isolated on a uniform background. Traditional similarity search will struggle with such a use case.

QUERY IMAGE

Choose file



Women

Men

SEARCH RESULTS

Men : Formal Shirts



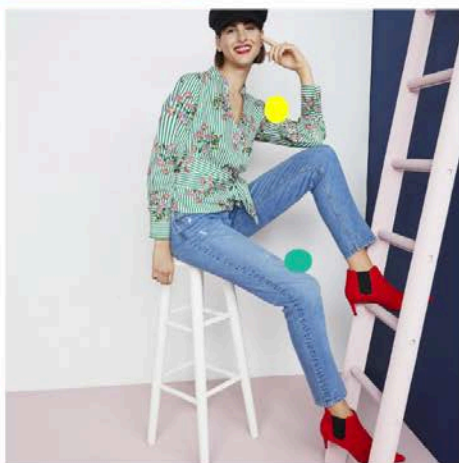
Men : Casual Shirts



Men : Non Iron Shirts

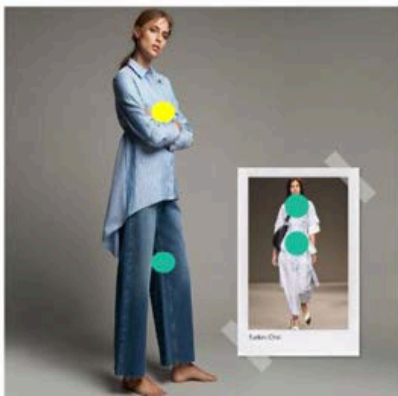
EXACT MATCHES

Matches can be found in challenging pictures including apparel that's displayed on a model as well as isolated on a plain background, which are visually very different.

[Choose file](#)

SIMILAR RESULTS

The product catalog doesn't necessarily include an exact match. Therefore, it's very important that the algorithm is able to also suggest similar items.

Choose file**Women : Jumpers****Women : Shirts & Blouses**

CATEGORIES

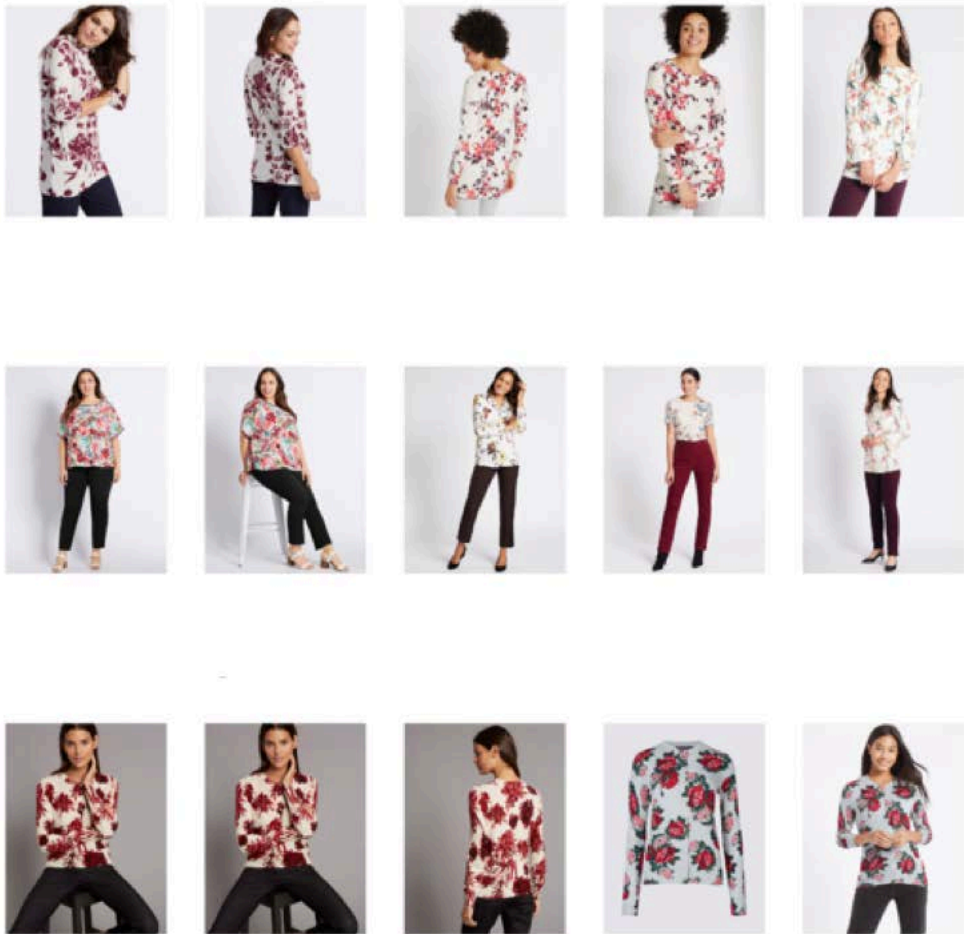
Search results can be organized by apparel category, which makes it easy to refine the results.

CHALLENGING QUERY IMAGES

The system handles challenging query images. For example, this one, where the system correctly identifies the apparel items even though the scale of the people are very different.

This is especially useful for pictures that are taken of outfits in magazines (user sees a great outfit in a magazine, takes a photo of it, and searches our product catalog for similar items).

Choose file



CHALLENGING QUERY IMAGES

Another example of a challenging photo, this time an in-the-wild query image.

This photo is taken by one of the researchers through the window of a storefront.

Note, that there is no matching item in the product catalog, so the system recommends items with similar patterns.

Deployment

Micro-service based approach

- Ability for different Adobe products to leverage services
- Network effects

API first/only approach



Adobe