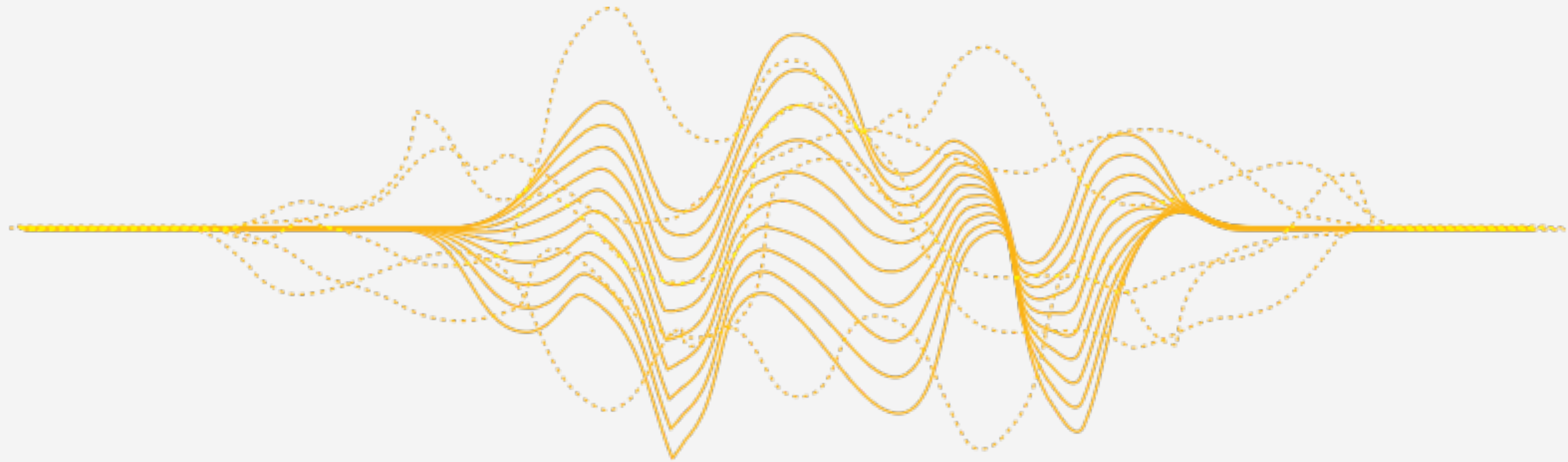


# Using A.I. and Images to Grow your Business

**Dominik Pogorzelski**  
VP of Product Management

April 25th, 2018





“Hi Dominik, what can I help you with?”





“Sounds lovely, here are some houses I found with your dream kitchen and a fireplace”



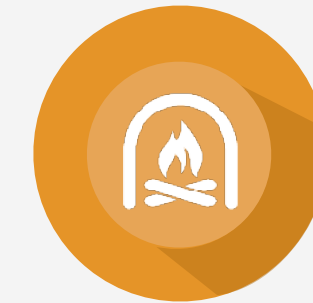
# What is Computer Vision?



# A.I. can automatically detect specific information inside images



ROOM TYPE: Living Room



HOME FEATURES



CONTENT MODERATION

# What's in it for MLS' and portals?



**AUTO-MODERATE  
VISUAL CONTENT**



**AMAZE YOUR  
USERS**



**CONVERT  
MORE LEADS**



# Avoid fines and control content quality



**AUTO-MODERATION**

# Should this photo be posted?



## Automagically moderate your content

A.I. can detect if an image is unrelated and if it has sensitive content that legally cannot be made public. You can put in some simple logic to automatically decide what images get posted or blocked.



august  partners



# ‘Wow’ your agents and buyers



**USER EXPERIENCE**  
(UX)



# How can you easily optimize your photo gallery?

Kitchens



Bathrooms



Living rooms

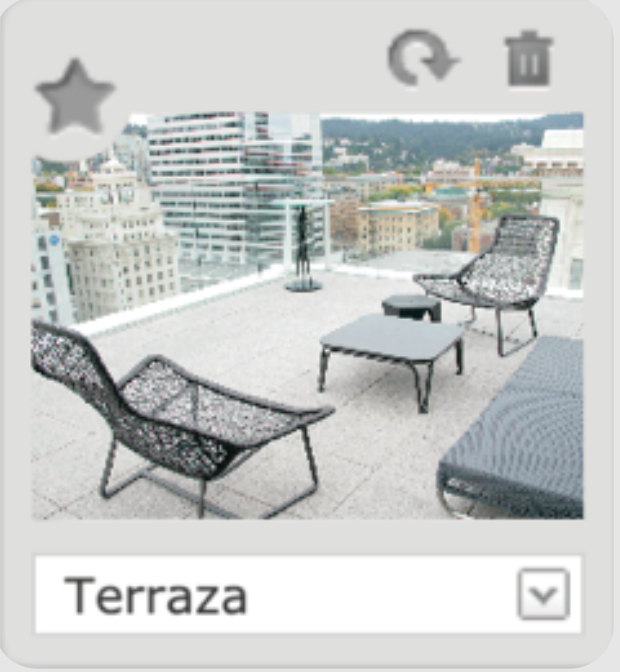
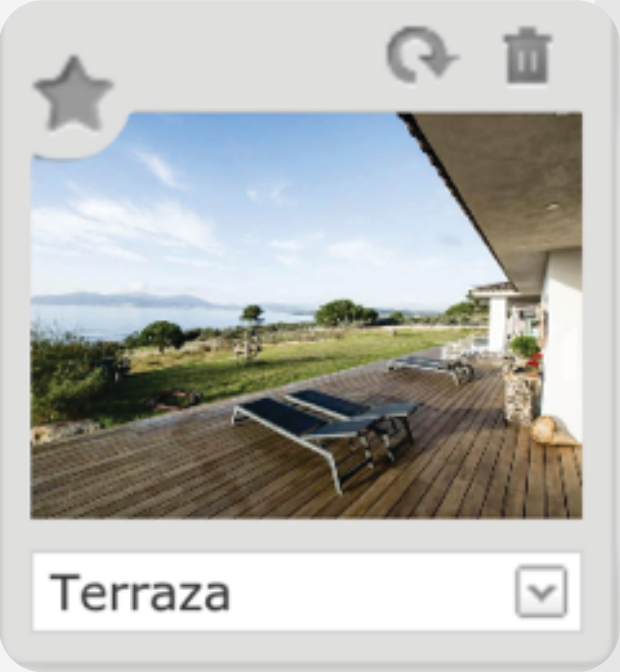
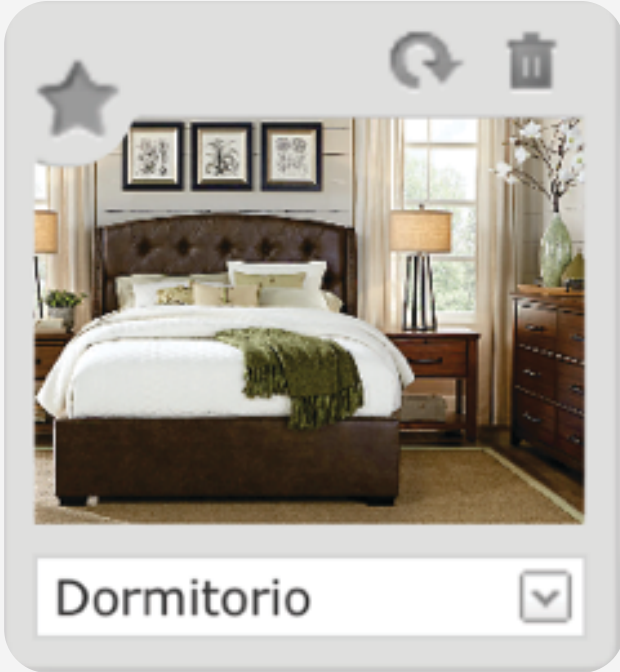
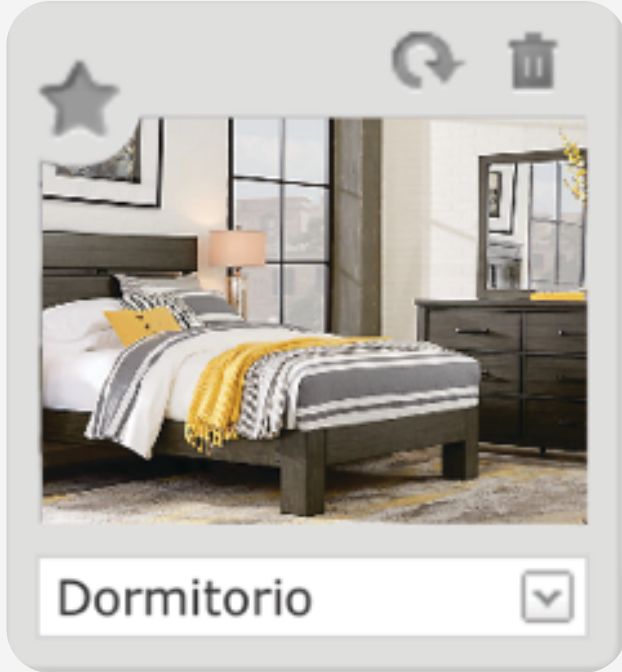
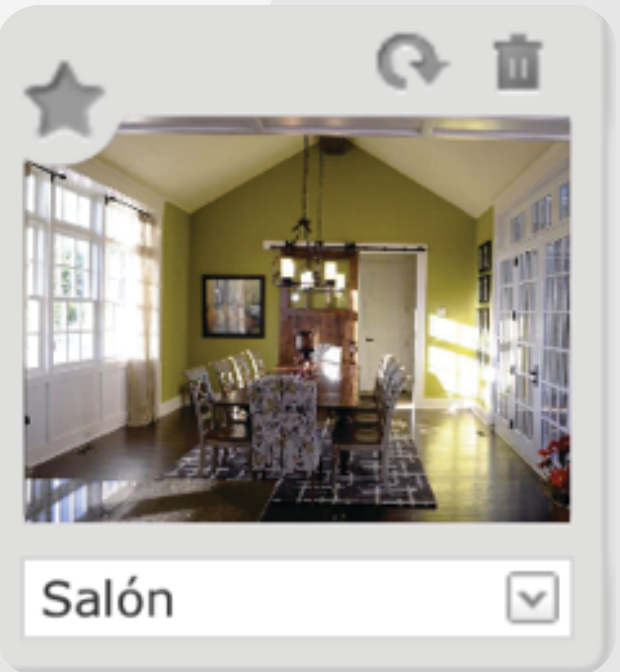
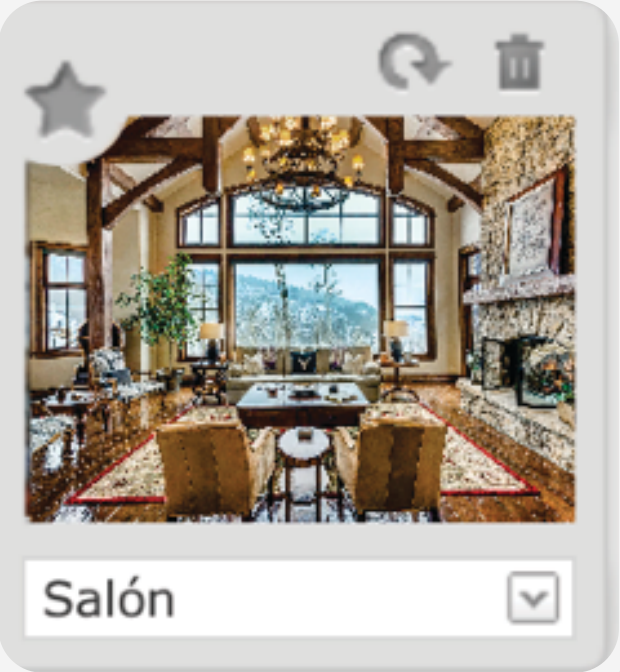
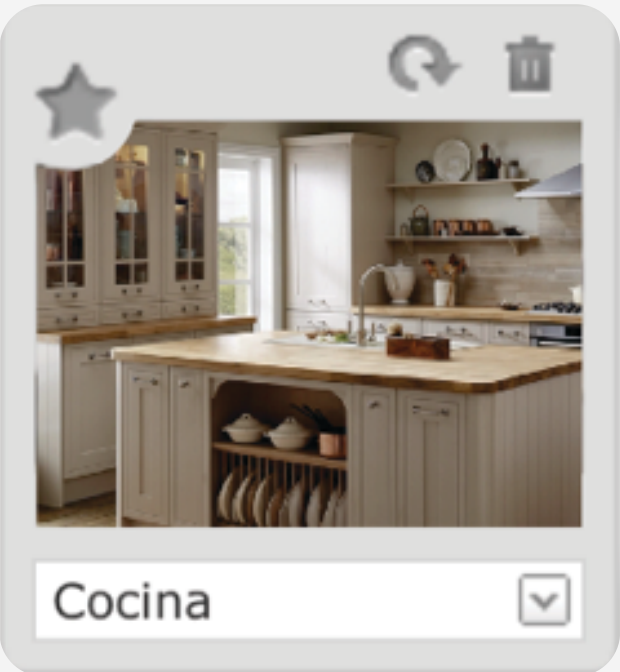
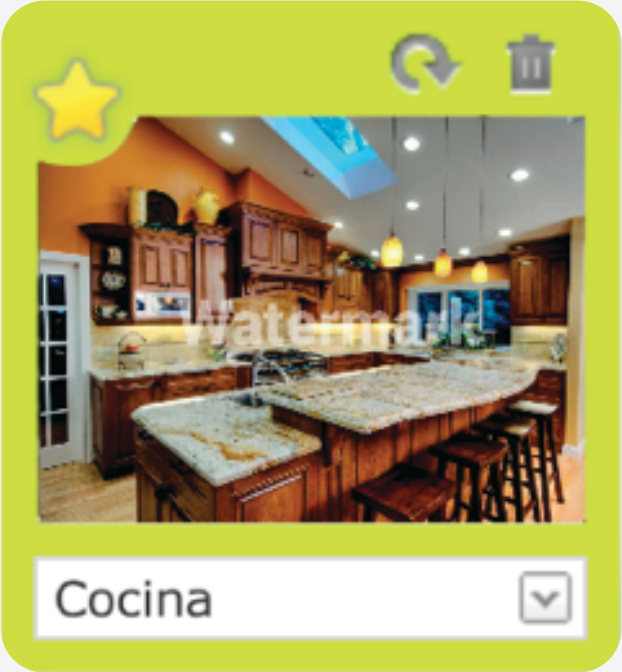


## Automatically organize images by category when uploaded

Computer vision can quickly and tirelessly categorize millions of images so you can save your agent precious time when creating a listing.



# idealista



## Estas fotos son de...

### Estancias

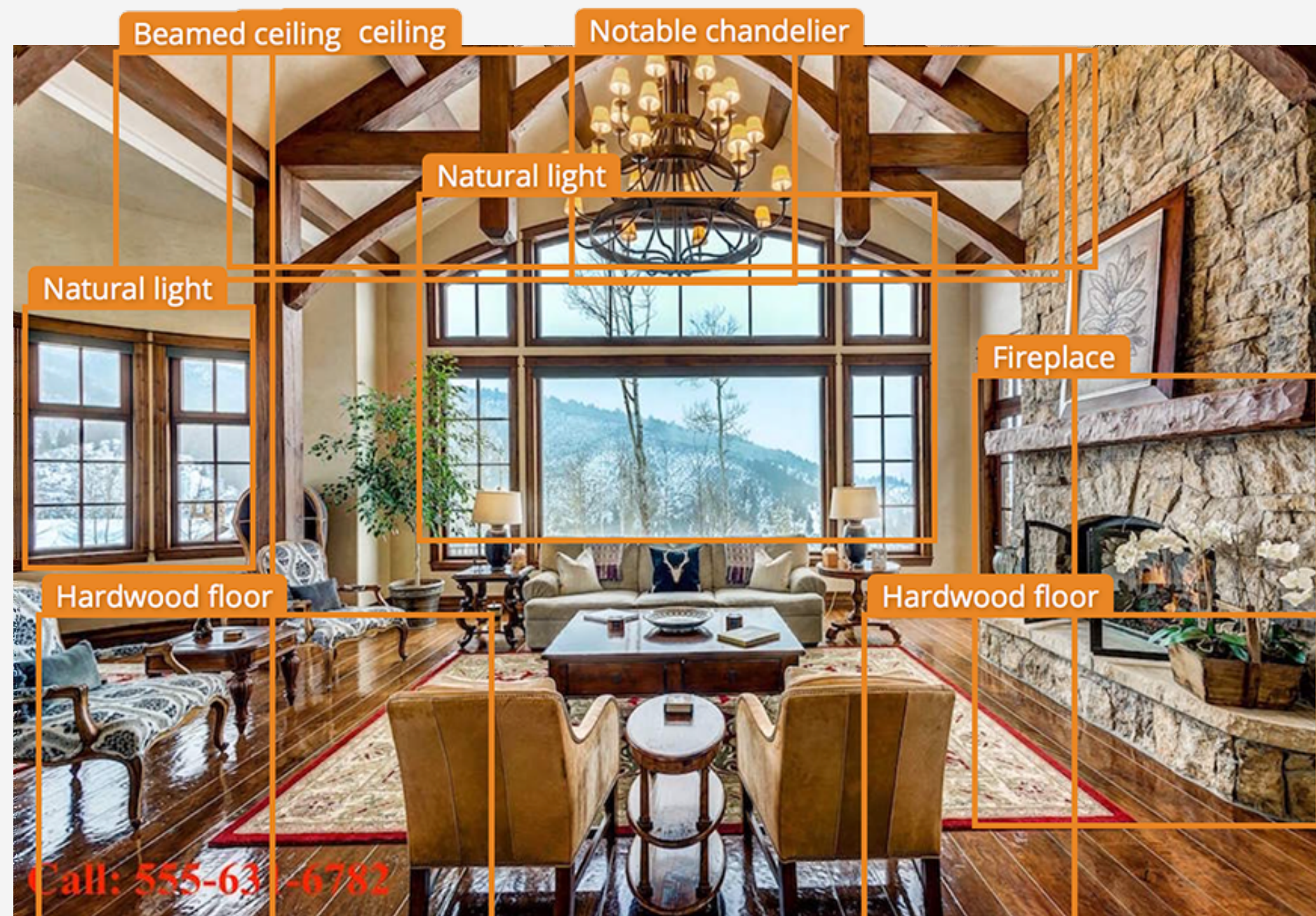
Cocina	+2	Baño	0
Salón	2	Dormitorio	2
Hall	0	Pasillo	0
Terraza	2	Patio	0
Fachada	0	Habitación	0
Plano	0	Buhardilla	0

### Zonas comunes y extras

Jardín	0	Piscina	0
Vistas	0	Plaza de parking	0
Detalles	0	Trastero	0
Zonas comunes	0	Certificado energético	0



# How to ensure important listing details aren't missed?



BEAMED CEILING



FIREPLACE



VAULTED CEILING



CHANDELIER



NATURAL LIGHT



HARDWOOD FLOOR

## Auto-fill listing details based on features taken from photos

Computer vision can extract specific home features directly from images so real agents don't omit critical home information when creating a listing.





letsbutterfly™

## Features from Photos

19 unique features from 6 photos

Close

Add a Photo



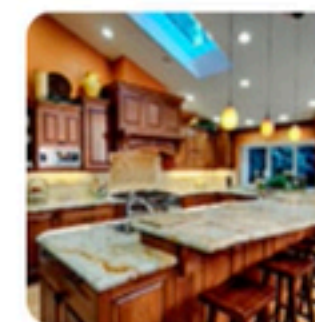
4 **living\_room**

- beamed\_ceiling
- natural\_light
- and 2 more...



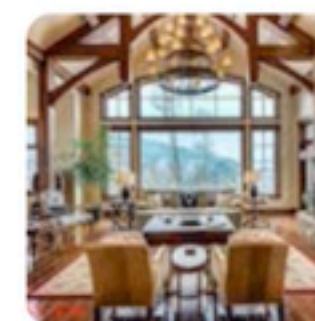
3 **pool**

- outdoor\_kitchen
- lawn
- pool



6 **kitchen**

- skylight
- french\_doors
- and 4 more...



7 **living\_room**

- ceiling\_fan
- vaulted\_ceiling
- and 5 more...



3 **patio\_terrace**





# How do you help a buyer choose between different houses?



**1834 Leeward Lane**

NEWPORT BEACH 92660

4 BDRM 3 BTH 2152 SQFT

920 000 \$



**2594 Willo Lane**

COSTA MESA 92627

4 BDRM 3 BTH 2841 SQFT

750 000 \$



**1909 Commodore**

NEWPORT BEACH 92660

4 BDRM 3 BTH 2188 SQFT

800 000 \$



KITCHENS

## Add a visual layer of room-by-room comparison

By knowing the room type of every image you can take your user one step closer to making his/her decision by adding a visual layer of what specific rooms look like between different houses.

# What about the visually impaired?



What does the living room look like?



Living room, fireplace, natural light, hardwood floor

**A.I. can help the visually impaired get a glimpse of their dream home**

Using the specific descriptions provided by computer vision (image-to-text) and text-to-speech voice assistants, the visually impaired can now hear what a house looks like!



What does the living room looks like?



Living room, fireplace, natural light,  
hardwood floor

The living room has a beautiful fireplace, hardwood floor and lots of natural light.



# Convert more leads



**CONVERSION  
RATE OPTIMIZATION  
(CRO)**



# Why not let your users choose their thumbnail of choice?



I'd love to see the kitchens in all my search results!

**Let the buyer browse your thumbnails based on his/her preference**

By having all your images categorized your portal can easily filter the listing's thumbnail based on the filter that the buyer is most interested in, bringing him/her one step closer to clicking through.



All image types

Exterior

Bedroom

Bathroom

Kitchen

Living



**18916 Saddle River Drive,  
Edmond, OK 730..**

4 beds 4 baths 3 cars 4,668 ft<sup>2</sup>

\$ 1,030,000      MLS: 791565  
Churchill-Brown and Associates

**TLC: \$ 6,011**



**5508 Shiloh Drive, Oklahoma  
City, OK 731..**

4 beds 3 baths 3 cars 2,350 ft<sup>2</sup>

\$ 288,990      MLS: 778210  
Premium Prop, LLC

**TLC: \$ 2,293**



**2109 Worthington Lane,  
Edmond, OK 73013**

6 beds 6 baths 3 cars 5,769 ft<sup>2</sup>

\$ 500,000      MLS: 763833  
Movers Real Estate Company

**TLC: \$ 3,961**





# What if the buyer is interested in specific features?

22 HOMES FOUND

Denver, CO



HIGH CEILING



FIREPLACE



NATURAL LIGHT



CARPET



## Preview listings by buyer's specific interest

By knowing what home features are present in what photos, not only can you refine the search results but you can also deep link into the actual images that have the features of interest.

# What if the buyer doesn't know exactly what they're looking for?



I like this type of kitchen.  
Can I see other similar ones?



## Visual Search can bridge that emotional attachment

Computer Vision can now distinguish patterns, shapes and colours in order to provide a more subjective recommendation that is based on visual similarities



I like this type of kitchen.  
Can I see other similar ones?



# A.I. can put your images to work



**AUTO-MODERATE  
VISUAL CONTENT**



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MORE LEADS**



Who is Restb.ai?

Computer vision company that specializes  
in image recognition for Real Estate



# Out-of-the-box API solutions:



**CONTENT MODERATION FOR REAL ESTATE**



**VISUAL SEARCH**



**33 ROOM TYPES**



**32 HOME FEATURES**



**16 HOUSE STYLES**



Image Recognition for Real Estate

# Out-of-the-box A.I. expertise:



**4 YEARS OF DEVELOPMENT**



**USING BEST-IN-CLASS NVIDIA HARDWARE**



**DEDICATED TEAMS OF ML / DS ENGINEERS**



**ACCURACY REACHING 99%**



**INFERENCE TIME < 100ms**



**PRE-PACKAGED SIMPLE API**



Image Recognition for Real Estate





# Questions?

[demo.restb.ai](https://demo.restb.ai)

Dominik Pogorzelski  
VP of Product Management