



# Image Recognition Transforming Online Real Estate



**Use Case**

"With their innovative solution, Infrd addressed our complex challenges and proved it right to partner with them." – Customer

#### ● Business

USA based large Online Real Estate Company

#### ● Challenge

Automatically classify property images and extract metadata from pictures to improve listings and search.

#### ● Result

Infrd was able to create a distinguishing feature for the customer with a fully functional property search platform leading to 30- 40% more conversions.

## Client Background

The client is a leading real estate broker with a business goal of using technology to provide valuable trending information and analytics to assist buyers and sellers in buying or selling decisions.

## Process of Our Platform



Automatically classify property images and extract metadata from pictures to improve listings and search.



Tagging the property condition.



Enable image search against the listing database consisting of millions of property images.

## How Infrd Helped

- Traditional image comparison approaches would have involved real time pixel by pixel comparison of images to find similarities; however, this would not have scaled for that use case as the catalog had millions of images.

- By extracting pertinent features from images and storing the feature information in an Elasticsearch index, Infrd converted the Image search problem into a text search / document search use case.
- Thousands of features are extracted from the input image and the pertinent features are compared against those available in the catalog to find matches.
- Property search became easier with the use of tag-based search. Infrd's image recognition platform could identify unique tags from a photograph using NLP, making it much more effective to identify a property with features like high ceiling, hardwood floors, slate roof etc.
- Infrd's microservices-based architecture offered a scalable platform.
- We supported multi channel integration over REST APIs.
- Native iOS and Android apps were provided for richer user experience on mobile.

## Process of our platform

A distributed computing platform was developed for pre-indexing millions of images in client's catalog.

Statistical methods were used to compare features of searched image against the index of existing images to find matching properties.



Deep Learning model was trained to extract features from images of properties.

Infrd's image search algorithm was trained to find the most similar property based on the features already existing in the database and give the best match along with a confidence score.

## Results

- Enhanced the real-estate listings
- Manual task of scoring the condition of property was reduced by 50% after using Infrd's platform.
- 50- 60% savings on human resources.
- 40% increase in sales

1. Extracting tags from images to identify features within an image. For instance, for a image of a Kitchen, we can find details such as:

### Image Upload

Select File

Submit Image Uploaded



#### IMAGE TAGS

#### SIMILAR PROPERTIES

#### PROPERTY CONDITION

#### ROOM TYPE

Range Hood

Stainless Steel Dishwasher

Stainless Steel Sink

Stainless Steel Fridge

Stainless Steel Chimney

2. Customers also use this to find similar properties. For the image uploaded, our visual search engine would find these properties:

Image Tags



IMAGE TAGS	SIMILAR PROPERTIES	PROPERTY CONDITION	ROOM TYPE

3. The algorithms can also be used to determine if the property is trashed or needs major repairs:



IMAGE TAGS	SIMILAR PROPERTIES	PROPERTY CONDITION	ROOM TYPE
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Condition is : POOR  
Score : 85.10  
Alert : Low Contrast Image. Predictions might not be right

4. We can also categorize images based on the room type that they belong to:



IMAGE TAGS

SIMILAR PROPERTIES

PROPERTY CONDITION

ROOM TYPE

Bedroom

We can also extend our platform to do custom data extraction from images to suit your specific use case.



[Click here for Free Demo](#)



## About Infrd

San Jose, CA, based Infrd Inc is a leading Machine Intelligence partner to Banking, Financial services and Insurance industries across the globe. Infrd's focus is on providing AI as a service and leveraging its homegrown machine learning platform to solve analytics and automation related problems for the customers. Infrd's platforms and algorithms extract deep insights from big data based on artificial intelligence and deep learning and offer these insights to drive decisions & automate extraction for customers.



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