# Hands-on Lab: Watson Discovery (10 min)

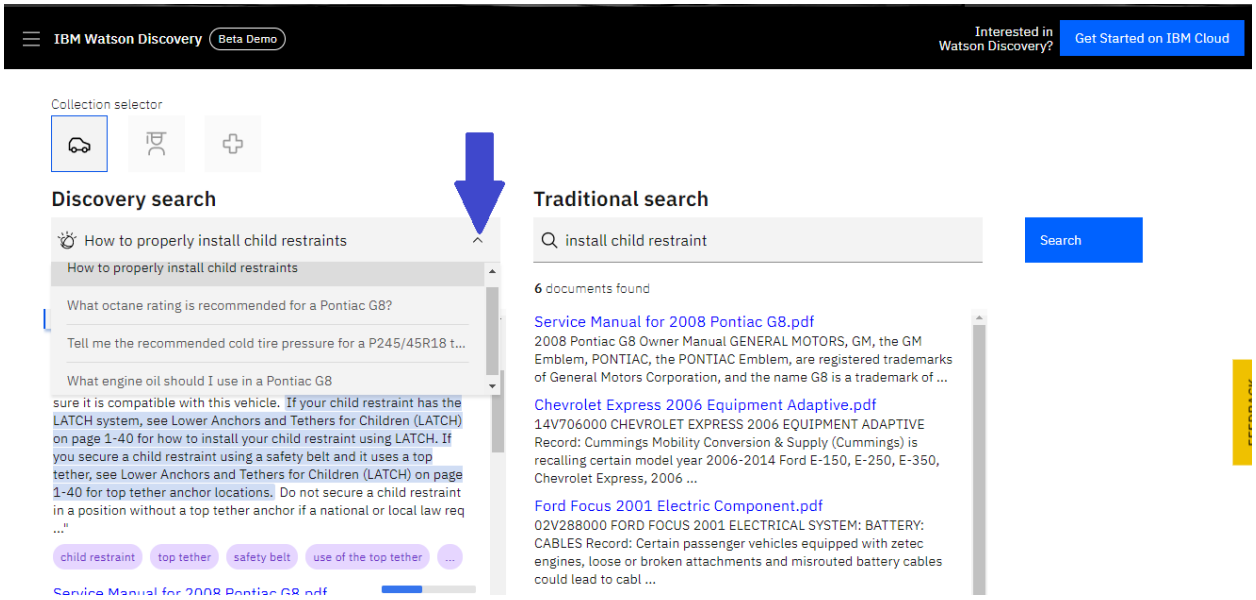
Objective for Exercise:

- To make you familiar with Watson Discovery Service.

## Exploring Watson Discovery

IBM provides an online demo of Watson Discovery at Discovery Use the following steps to explore the demo:

1. Access the online demo here: Discovery
2. The demo contains Car Manual collection.
3. Under Discovery search click on the dropdown and select *How to properly install child restraints* and then click on the Search button on the right.



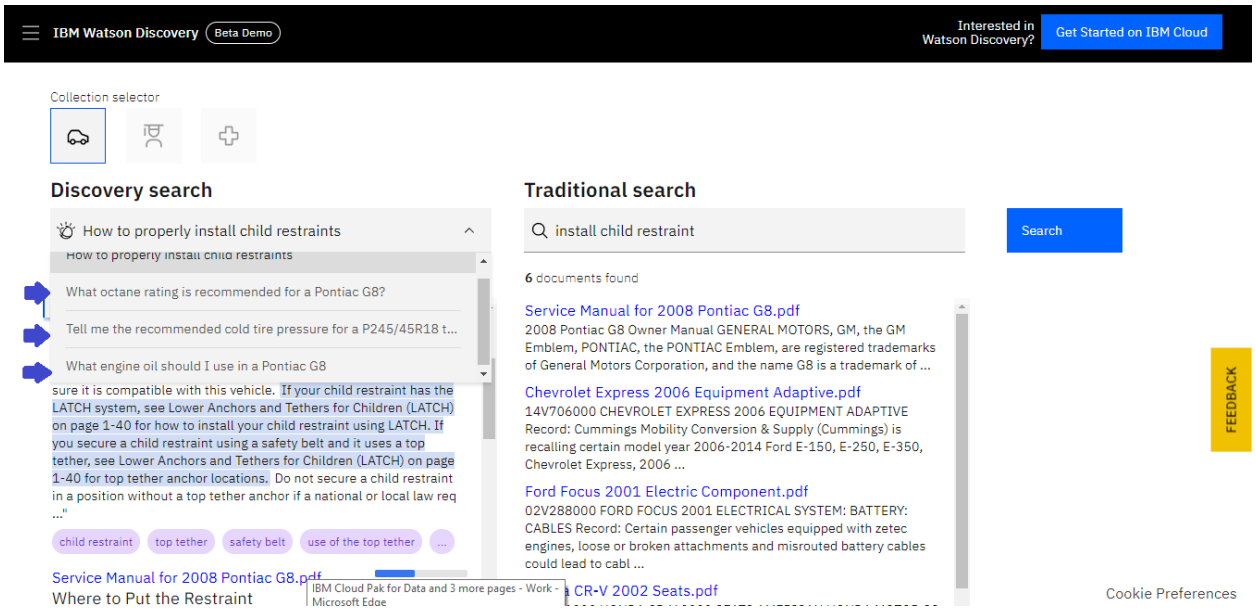

4. Scroll down and read the answers Watson discovery found from the collection, you can also read the most relevant answer by looking at the confidence score.

Explanation on Traditional search and Discovery search:

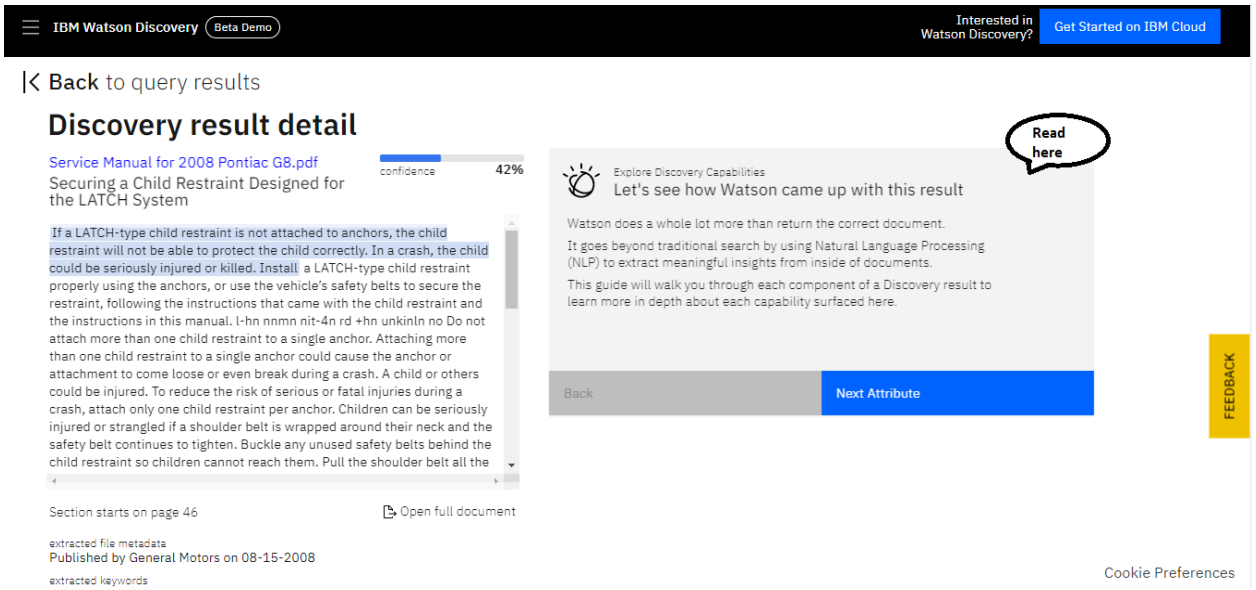
Traditional enterprise search and search engines don't provide employees and customers with exact answers. They can't understand the nuances of phrases and acronyms in your industry and accurately search through your complex documents in a timely manner.

Watson Discovery solves these challenges. It is enterprise search that delivers specific answers to your queries while also serving up the entire document and supporting links, allowing your employees and customers to make informed decisions with confidence.

5. Now analyse the difference in the Discovery search and Traditional search.
6. Go and explore other given options for the Car manual collection:




7. Click on the answer to open the document and read the Discovery result detail
8. Explore Watson Discovery capabilities and read how Watson came up with these results by clicking on Next Attribute



# Hands-on Lab: Watson Natural Language Understanding (10 min)

## Exploring Watson Natural Language Understanding

Objective for Exercise:

- Learn how to use Watson Natural Language Understanding to analyze a piece of text, and a site specified by URL.

IBM provides an online demo of Watson Natural Language Understanding at:Natural Language Understanding(or from the product page, click View demo).

Use the following steps to explore the demo:

1. Access the online demo here:Natural Language Understanding
2. Under the Examine a news article or other content heading, read the text given in the Text box, and then click Analyze.
3. What is the overall sentiment of this piece of text?
4. Click Emotion, Entities, Categories, and Concepts to answer the following questions:
5. What is the prevalent emotion? Are there any other prevalent emotions?
6. What are the entities that Watson Natural Language Understanding has identified?
7. What categories are identified?
8. What concepts are listed?
9. Under the Examine a news article or other content heading, click URL.
10. Copy the URL and open the page in a new tab. What type of content is this?
11. On the Natural Language Understanding tab, click Analyze.
12. What is the overall sentiment of this piece of text?
13. Click Emotion, Keywords, Categories, and Concepts to answer the following questions:
14. What is the prevalent emotion? Are there any other prevalent emotions?
15. What are the first 3 keywords that Watson Natural Language Understanding has identified?
16. What categories are identified?
17. What concepts are listed?

Optional:

Copy the following text into the Text box:

“Morehouse College, the private, all-male, historically black college in Atlanta that counts Martin Luther King among its alumni, expects its attendees to aspire to greatness. Soon, many in the graduating class of 2019 can start doing so, no matter the cost.

Tech billionaire Robert Smith's surprise pledge during his commencement speech last weekend to pay off 396 graduates' college loan debts is a potentially $40-million US game changer for a generation of African-American grads. It removes an economic millstone that might have otherwise limited their possibilities, or at least slowed their progress.

The Morehouse class of 2019 has been spared what might have amounted to decades of monthly payments. Smith delivered the kind of relief that can pay dividends for a de-stressed cohort of young professionals. Social psychology research suggests it could inspire a positive contagion effect, with generosity trickling downstream from past grads to new students.”

1. Click Analyze.
2. What is the overall sentiment of this piece of text?
3. Can you identify the college from the Entities listed?
4. Where would you look to find out what type of article this is?

Note:

The complete article can be read at: CBC News -'Like Christmas every day': A billionaire's pledge to erase this class's college debts could echo for decades

# Hands-on Lab: Watson Knowledge Studio (10 min)

Objective for Exercise:

- Learn how to use Watson Knowledge Studio to analyze three pieces of text, first with the default model, and then with the Knowledge Studio Custom Model.

- Comparing the results for both models.

## Exploring Watson Knowledge Studio

IBM provides an online demo of Watson Knowledge Studio at: Watson Knowledge Studio(or from the product page, click View demo).

The demo environment provides two models for analysis:

- The Default Model, which is a bare-bones annotation model based on a superficial grammatical analysis.
- A Knowledge Studio Custom Model, which is a sophisticated annotation model based on machine learning training in a specific domain.

Use the following steps to explore the demo:

Crash Report

1. Access the online demo here: Watson Knowledge Studio
2. Under Text to be analyzed, click in the Crash Report text box to ensure that it is selected.
3. Under Model to be used, click Default Model.
4. In the Analysis result, find the items identified as Vehicle.
5. In the fourth paragraph, follow the lines from the vehicle references. What actions and objects do they link?
6. In the fourth paragraph, what is identified as a Person?
7. Under Model to be used, click Knowledge Studio Custom Model.
8. In the Analysis result, find the items identified as PART_OF_CAR. Note that some of the items identified as Vehicle by the Default Model are identified as PART_OF_CAR, along with many other items.
9. How is the item previously identified as Person now identified?
10. Which of the two models do you think is more accurate?

Medicine

1. On the Watson Knowledge Studio page, under Text to be analyzed, click in the Medicine text box to ensure that it is selected.
2. Under Model to be used, click Default Model.
3. In the Analysis result, find the two occurrences of the word morphine. Are both correctly identified?

4. Under Model to be used, click Knowledge Studio Custom Model.
5. In the Analysis result, find the items identified as MEDICINE. Are the two occurrences of the word morphine now correctly identified? What about other items identified as MEDICINE?
6. Follow the lines from each DISEASE label to the EFFECT label, and note the item each identifies. Has Watson Knowledge Studio identified the items which are adverse drug reactions?
7. Which of the two models do you think is more accurate for this piece of text?

Fantasy Football

1. On the Watson Knowledge Studio page, under Text to be analyzed, click in the Fantasy Football text box to ensure that it is selected.
2. Under Model to be used, click Default Model.
3. In the Analysis result, find the three items identified as Organisation.
4. How is Sammy Watkins identified?
5. Under Model to be used, click Knowledge Studio Custom Model.
6. In the Analysis result, find the items previously identified as Organisations.
7. How is Sammy Watkins identified? What is his relationship to Chiefs?
8. Which model provides more information?

Given what you have learned, would you use the default model, or create your own custom model to suit your specific domain?

# Hands-on Lab: Watson Speech to Text (10 min)

## Exploring Watson Speech to Text

Objective for Exercise:

- Learn how to use you will use Watson Speech to Text to transcribe audio.

IBM provides an online demo of Watson Speech to Text at:Watson Speech to Text(or from the product page, click Demo).

The demo environment has several ways you can provide audio:

- Record Audio - uses your microphone to record audio.
- Upload Audio File - allows you to upload an .mp3, .mpeg, .wav, .flac, or .opus format audio file.
- Play a sample file.

Use the following steps to explore the demo:

1. Access the online demo here:Watson Speech to Text
2. Click Play Sample 1.
3. Observe as Watson Speech to Text transcribes the audio and detects multiple speakers.
4. Click Word Timings and Alternatives.
5. On the first line, hover over so2
6. How many alternatives does Watson provide?
7. How confident is Watson that this is the word “so”?
8. In the fourth paragraph, hover over a2
9. How confident is Watson that this is the word “a”?
10. What alternatives does Watson provide?
11. In the Keywords to spot box, read the suggested keywords.
12. In the transcribed text box, click Keywords (5/9).
13. How many times was “artificial intelligence” spotted?
14. To add a keyword, in the Keywords to spot box, click before IBM and type *operability*, and then click Play Sample 1.
15. Did Watson spot the additional keyword?

Optional (requires microphone)

1. Click to clear the Detect multiple speakers check box.
2. In the Keywords to spot box, delete the existing keywords and add the following text: *moon, decade, rocket, easy, hard*
3. Click Record Audio.
4. Record the following text: *We choose to go to the moon. We choose to go to the moon in this decade and do the other things, not because they are easy, but because they are hard, because that goal will serve to organize and measure the best of our energies and skills, because that challenge is one that we are willing to accept, one we are unwilling to postpone, and one which we intend to win, and the others, too*.
5. Click Word Timings and Alternatives.
6. Does Watson suggest any alternatives for words?
7. What is Watson’s level of confidence for each alternative?

8. Click Keywords (x/5).
9. Did Watson spot the keyword “rocket”?
10. Why not?

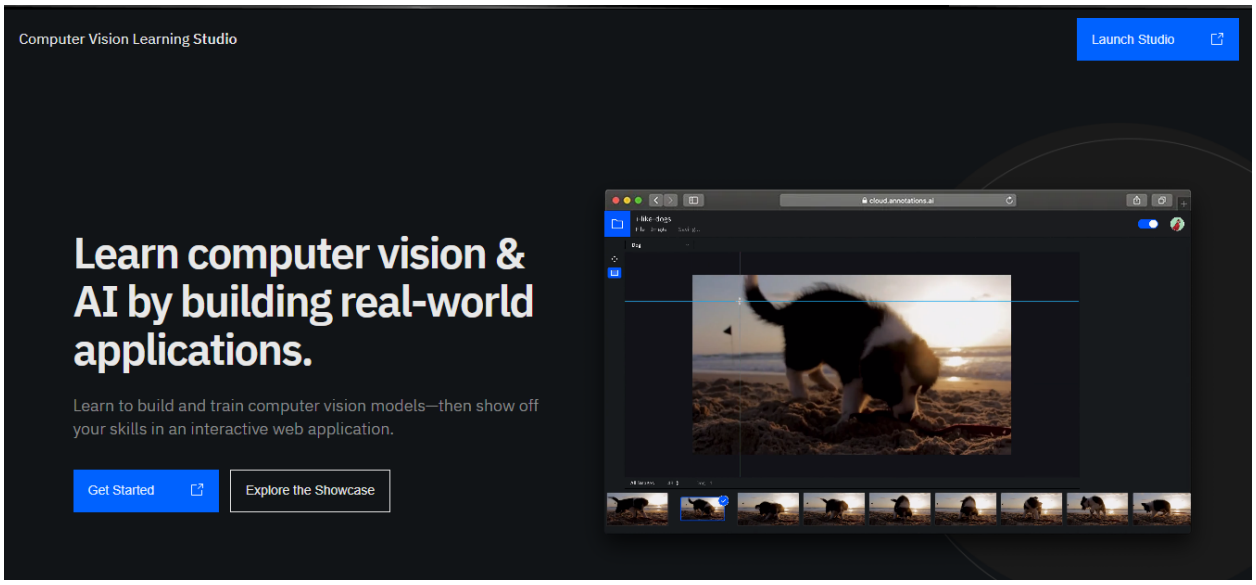
## Hands-on Lab - Image Classification (10 min)

Objective for Exercise:

- Explore Computer Vision Studio
- Understand Image Classification

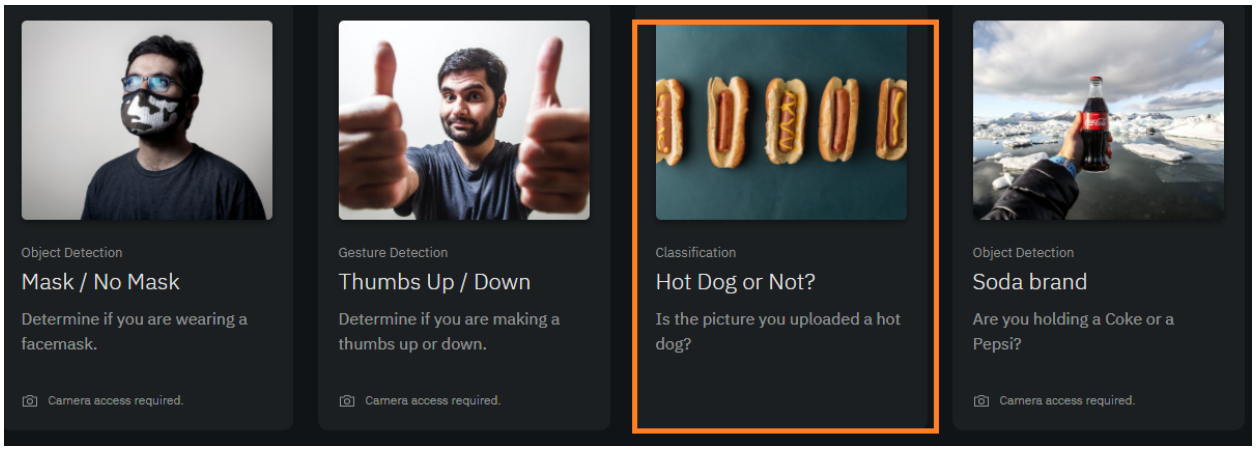
IBM provides various demos on object detection and image classification. In this lab we will be working on a pre-trained Computer Vision model which analyzes and identifies the picture you uploaded is a hot dog or not.

Click here to view the demo Computer Vision Studio

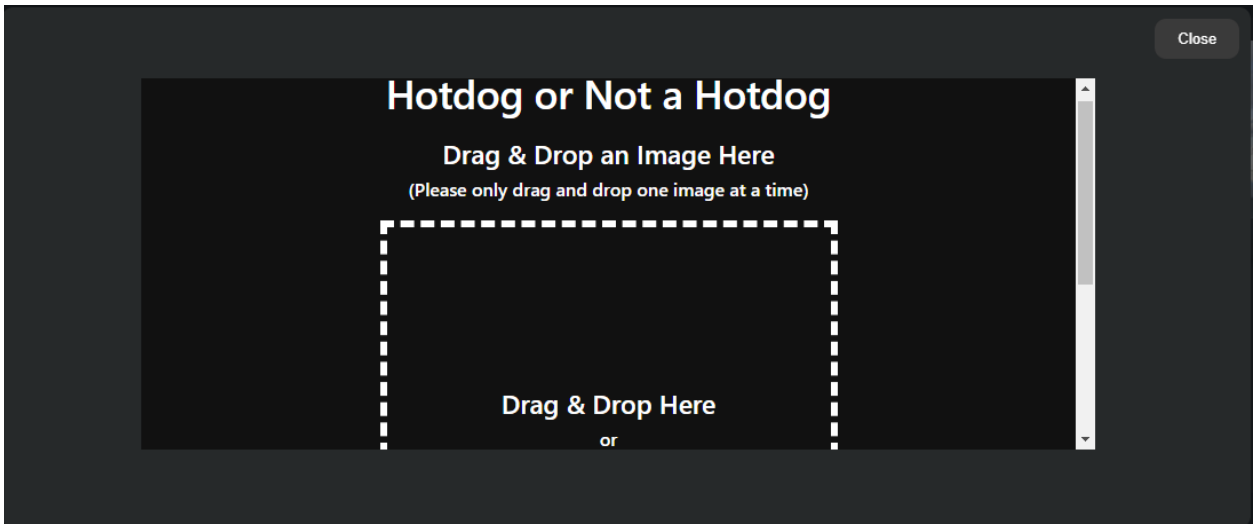



Use the following steps to explore the demo:

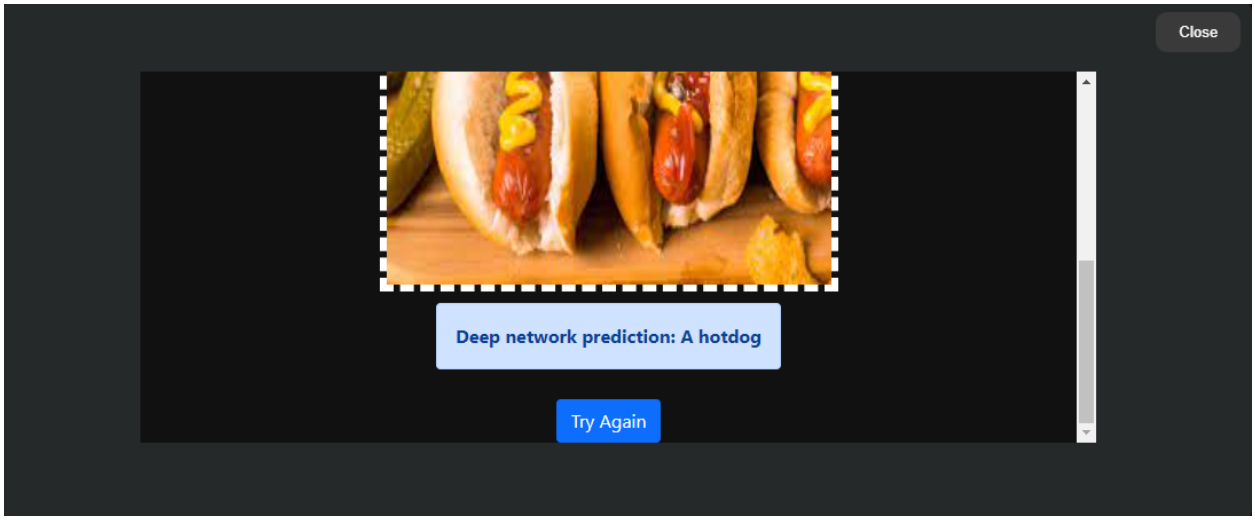
1. Scroll down and select Hot Dog or Not:

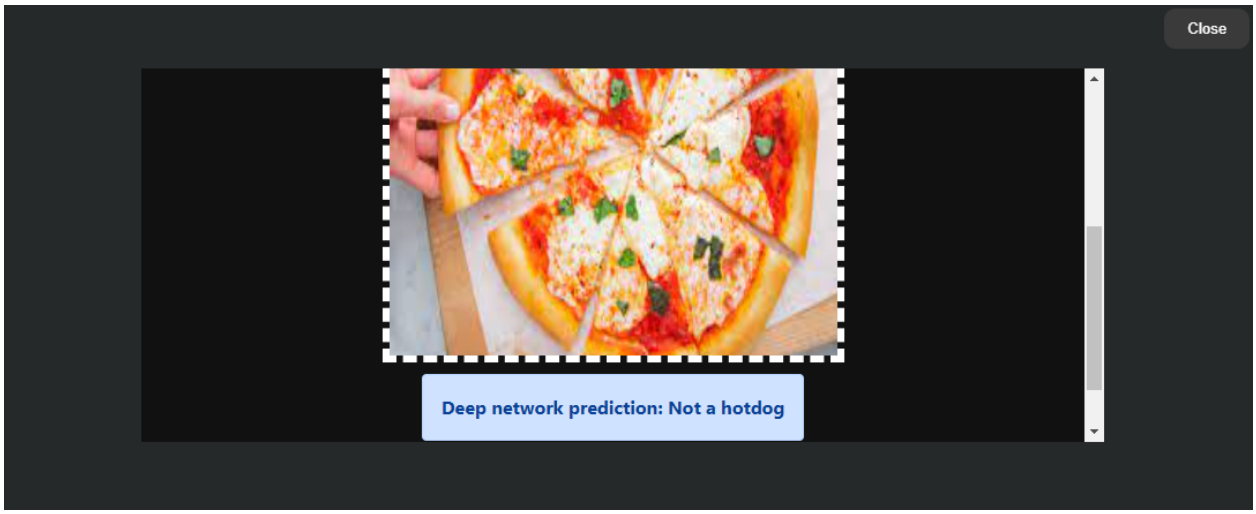



2. Once the demo is open, you should see the below screen:




3. Check what demo returns:
   You can use Google to download the images to test the model.
   - Upload a Hot Dog image and analyze the result. Once uploaded the prediction should be shown as below:

4. 

    - Upload a Pizza image and checkout the model returns Not a hot dog
5. 


You may try uploading different images and check how good the pre trained model works.

Note: You can check out more demos on CV Studio at the following link