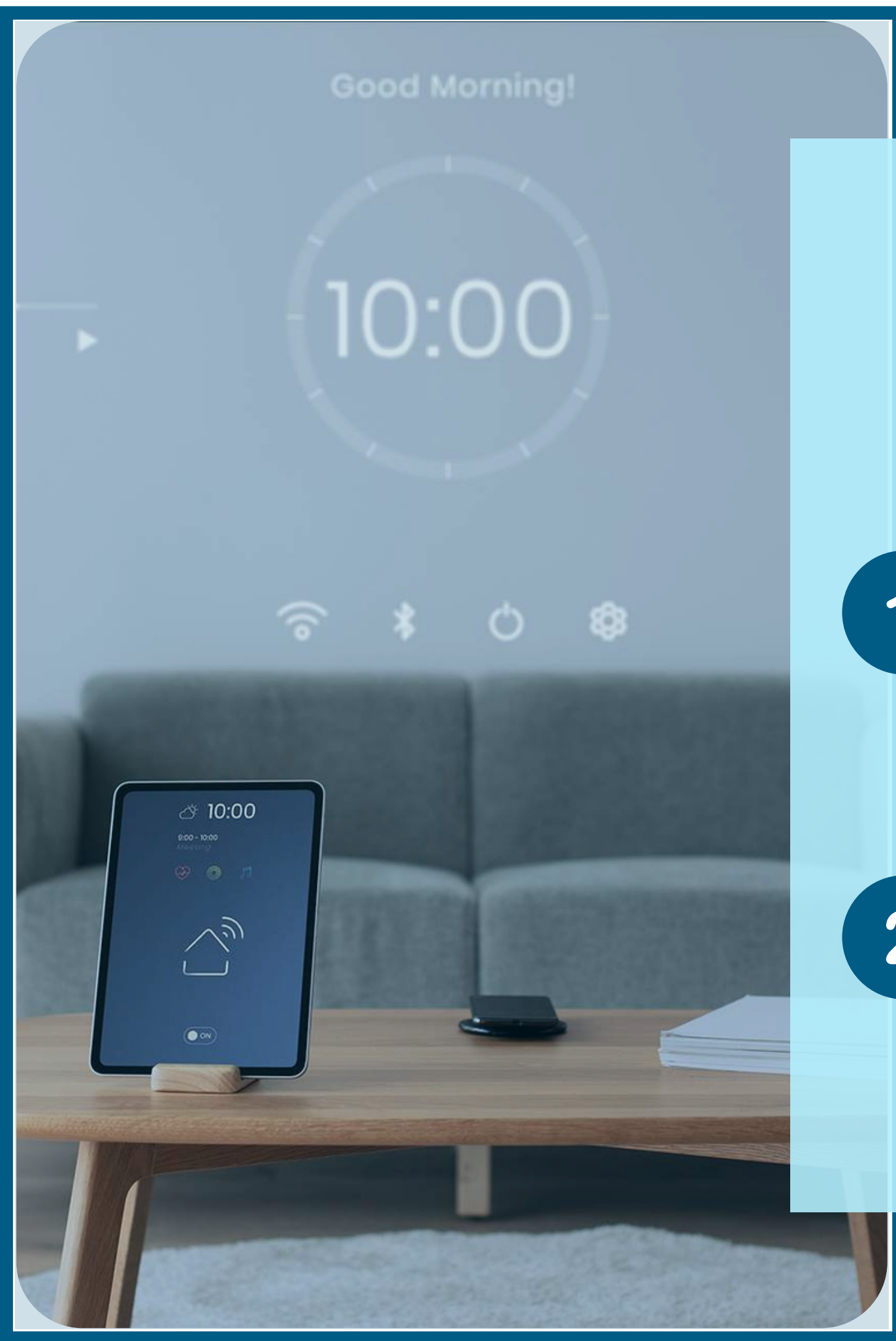


AI Domains: An Introduction





We saw many applications in which AI plays an active role. How do you think AI enables these applications?

1

Now that we have seen the tremendous influence of AI today, it is imperative for us to understand how AI works differently for different applications.

2

As we got to know in our AI Aware journey, a machine gains its intelligence on the basis of the data which is fed to it.

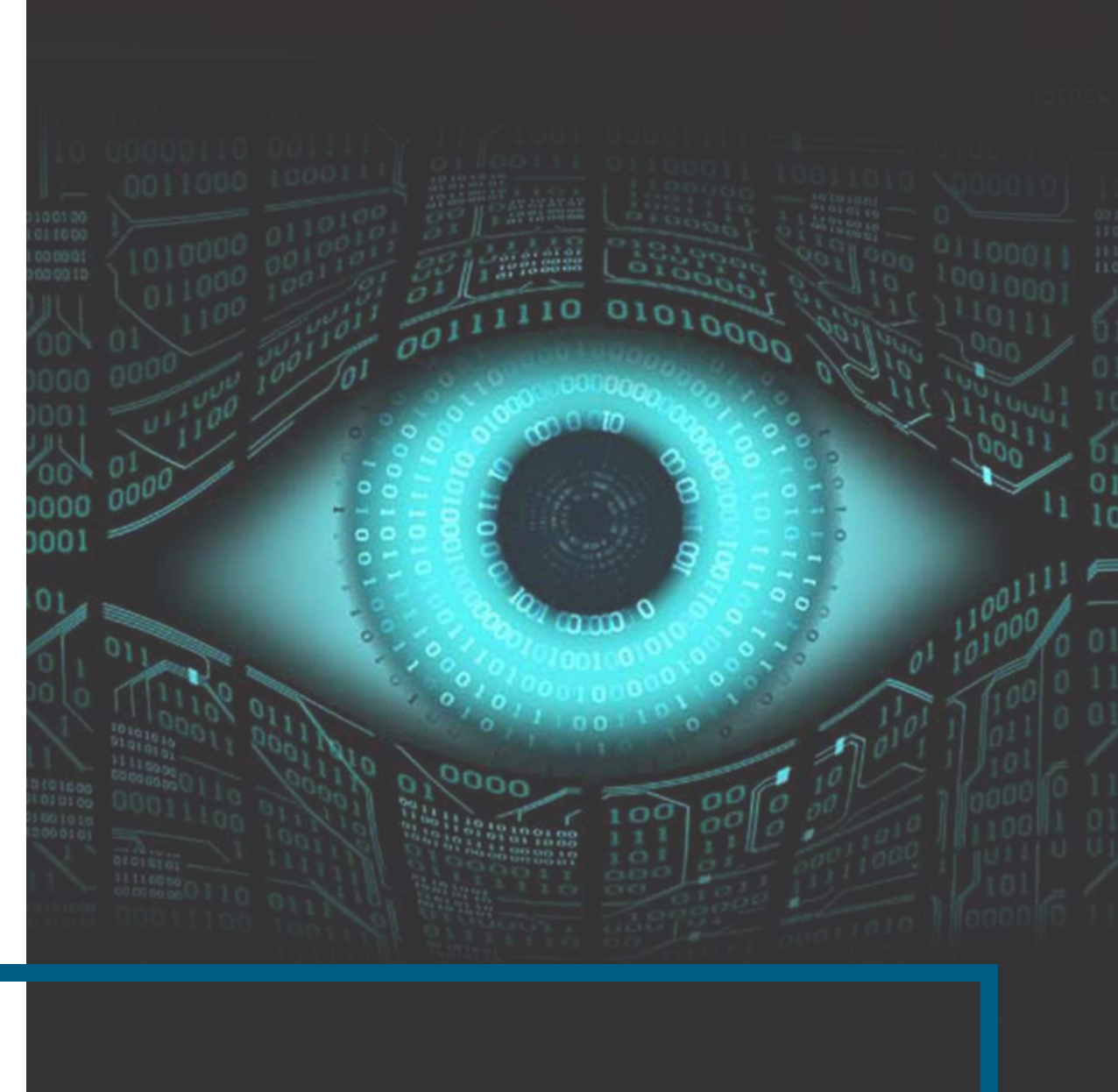
- 
- Machine gets its decision-making abilities after recognizing patterns and trends from the data during its training process.
 - Since AI has a wide variety of applications, we divide the entire field into sub-fields called the Domains of AI.
 - They differ from each other with respect to the kind of basic data fed to it. The data could be -
 - Numbers
 - Text and Speech
 - Images and Videos



STATISTICAL DATA



**NATURAL LANGUAGE
PROCESSING**

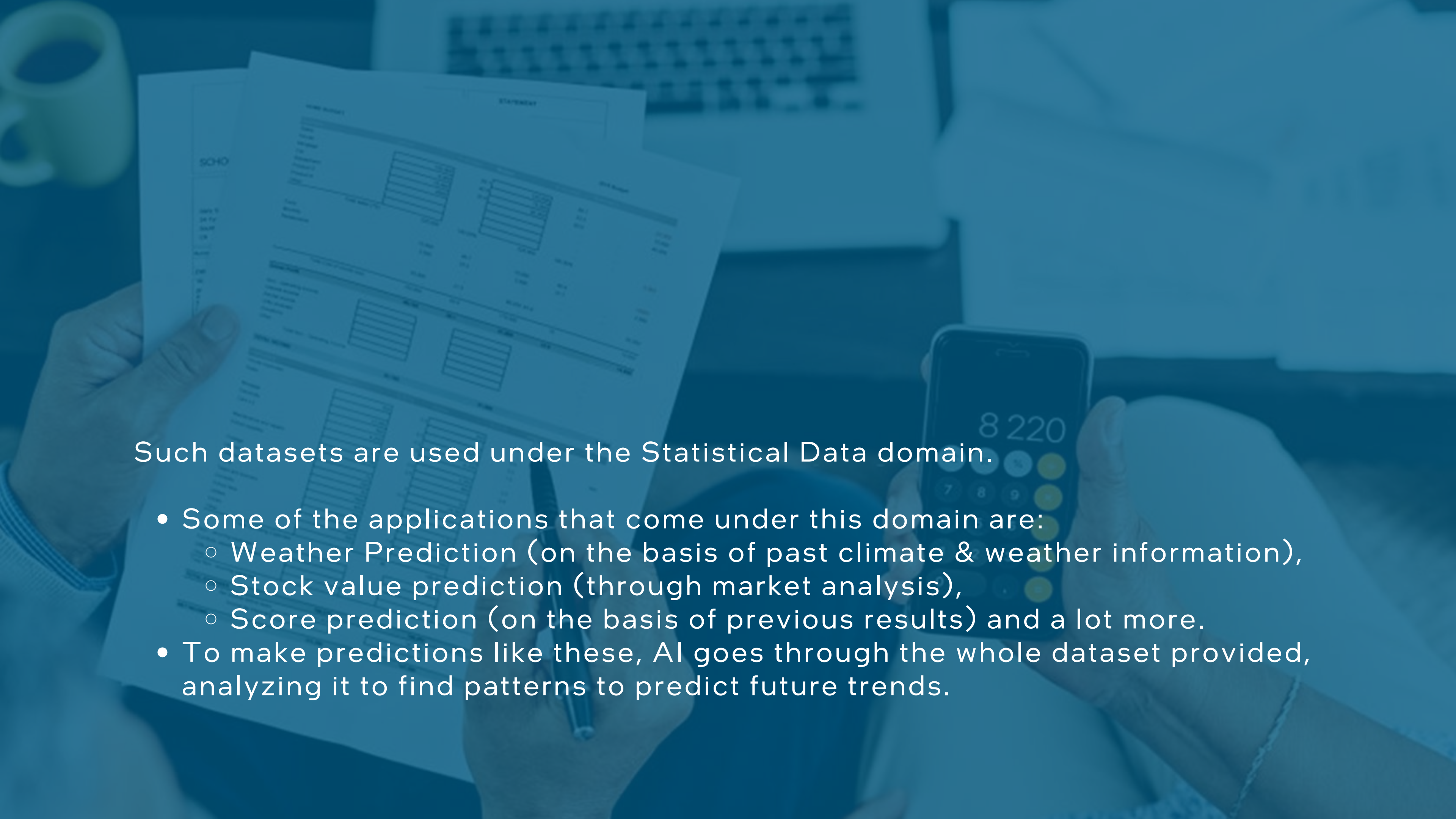


**COMPUTER VISION
(CV)**

Statistical Data

78.69	9.62	+140.04	-3.36	7.02
18.75	1.36	+180.98	-0.21	4.75
51.36	5.56	+740.21	-6.87	8.87
21.88	8.24	+122.56	-9.45	1.54
78.69	9.62	+140.04	-3.36	7.02
18.75	1.36	+180.98	-0.21	4.75
51.36	5.56	+740.21	-6.87	8.87
21.88	8.24	+122.56	-9.45	1.54

- 
- AI applications that fall under the domain of Statistical Data deal with numeric or alpha-numerical datasets.
 - You must have encountered data being collected in the form of series or tables. For example, attendance data, results, expense statements, etc.



Such datasets are used under the Statistical Data domain.

- Some of the applications that come under this domain are:
 - Weather Prediction (on the basis of past climate & weather information),
 - Stock value prediction (through market analysis),
 - Score prediction (on the basis of previous results) and a lot more.
- To make predictions like these, AI goes through the whole dataset provided, analyzing it to find patterns to predict future trends.

Statistical Data: An Activity

- 
- Experience how AI is using Statistical Data
 - Understand how better recommendations are created for social media:
 - Likes
 - Searches
 - Similar Profiles

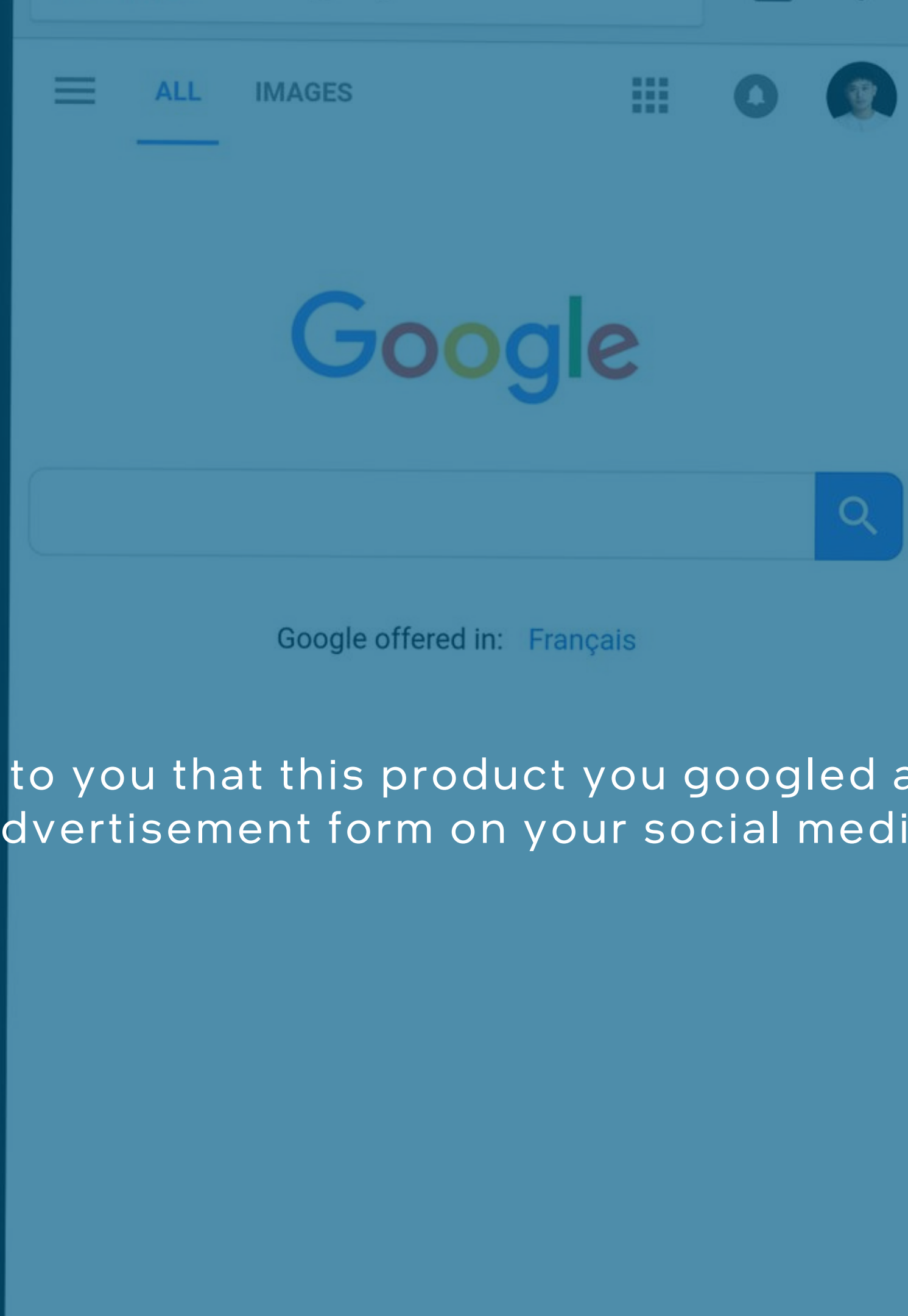
Wondering what Cakes and Shopping bags are doing in a Statistical Data activity?



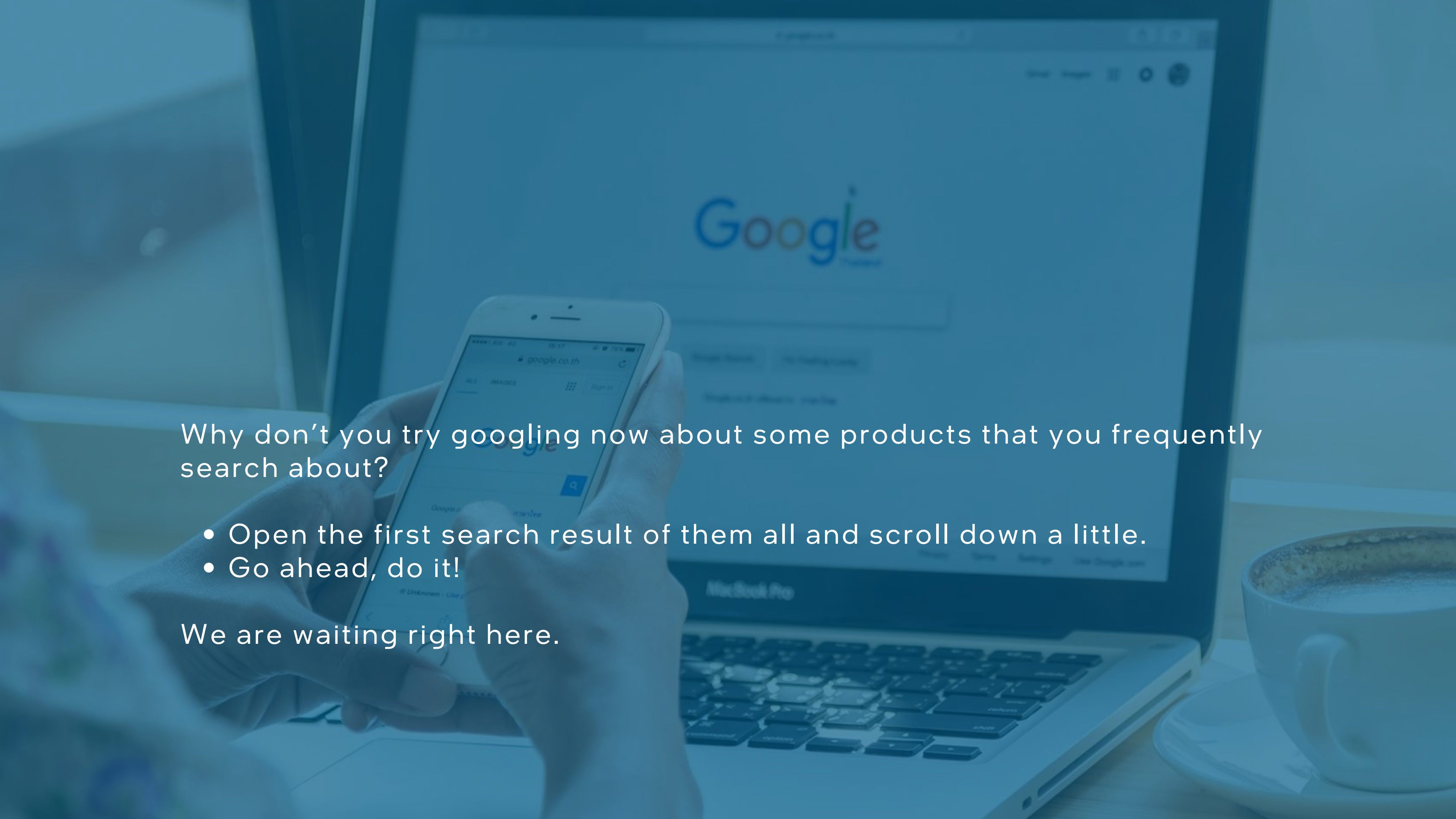
Have you ever craved a cake in the middle of the night?



Have you ever thought of shopping out of nowhere?



Has it happened to you that this product you googled about has popped up in an advertisement form on your social media, shortly?

A person's hands are holding a white smartphone, displaying a Google search results page. In the background, a laptop screen shows the Google homepage with the search bar and logo. To the right of the laptop, there is a white cup of coffee on a saucer. The entire scene is overlaid with a semi-transparent blue filter.

Why don't you try googling now about some products that you frequently search about?

- Open the first search result of them all and scroll down a little.
- Go ahead, do it!

We are waiting right here.

myntra

×





 All

 Shopping

 Books

 News

 Images

⋮

 More

Settings

Tools

About 1,52,00,000 results (0.56 seconds)

www.myntra.com

Myntra

Search myntra.com



Women

Online Shopping for Women. Shop Online from a wide range of ...

Men

... for Men - Men Shopping online with range of clothing, shoes ...

Kids

Kids Clothing - Online Shopping for Kids Buy kids wear, Kids ...

Myntra - Buy Myntra online in ...

Myntra Online. Shop for Myntra in India ✨ Buy latest range of ...

Women Clothing

Women's Clothing - Choose from a variety of clothing for women ...

Login

Bag - Myntra Insider - Contact Us - ...



Did you ever google something and...

It was soon on your social media feed?



Ashok Kumar

Sponsored · Paid for by XYZ Party · 

Ashok Kumar is going to bring development and prosperity to our state.



Your Vote Matters

Vote for Ashok

VOTEASHOKKUMAR.CO.IN

Learn more

2 Comments

You will shortly see advertisements about the same on your Facebook feed. In fact, you might have seen these ads before as well. Are you wondering how AI does that, and what has it got to do with Statistical Data?



1

Why don't you go to your Facebook now and look for the first three advertisements? Take note of these.

2

Please open another social media site and keep a note of the first three advertisements you see there. Take note of these as well.

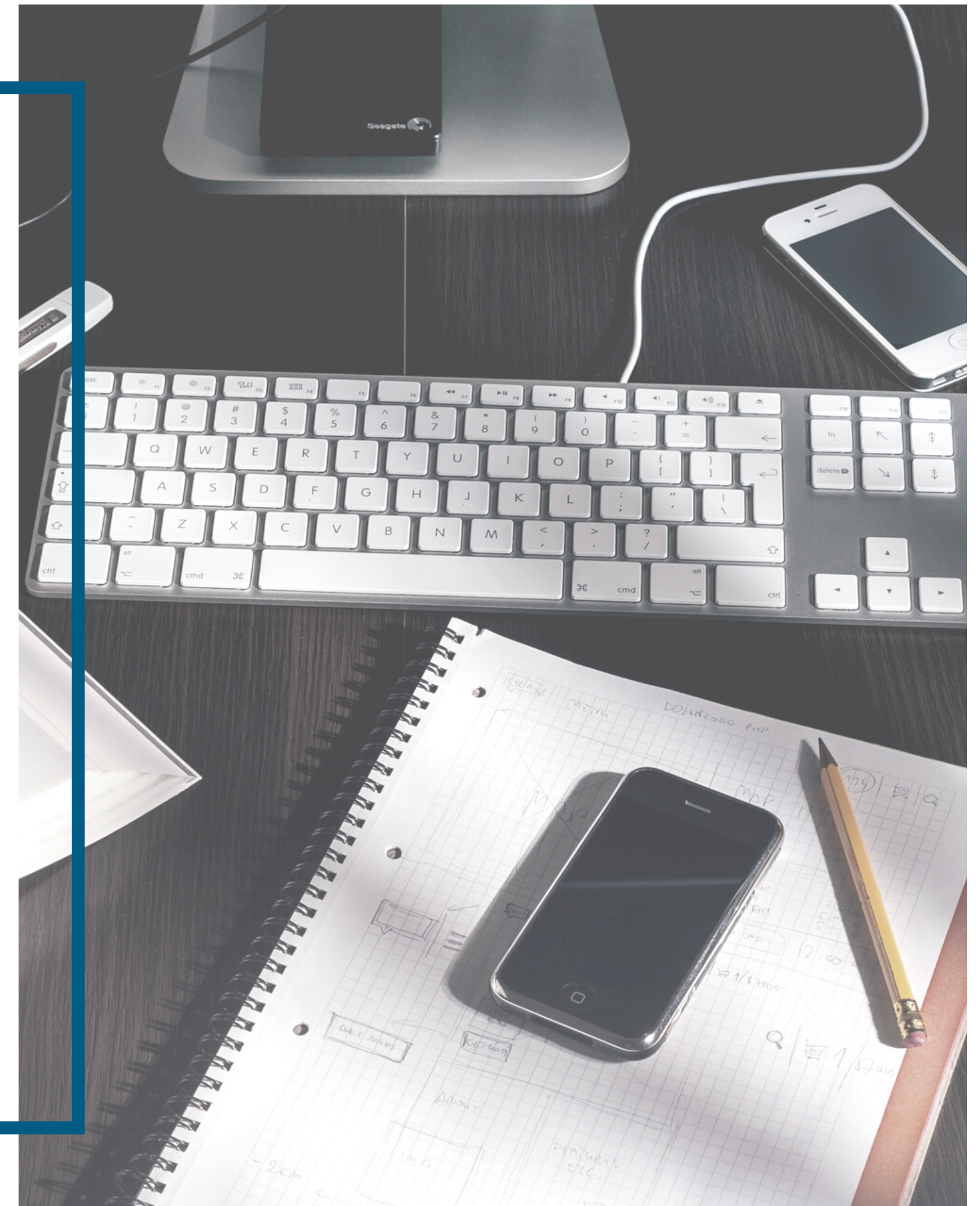
3

Write down what these advertisements are about.

Are these the products you have searched for before?

Are these the products you have searched for on any social media platforms?

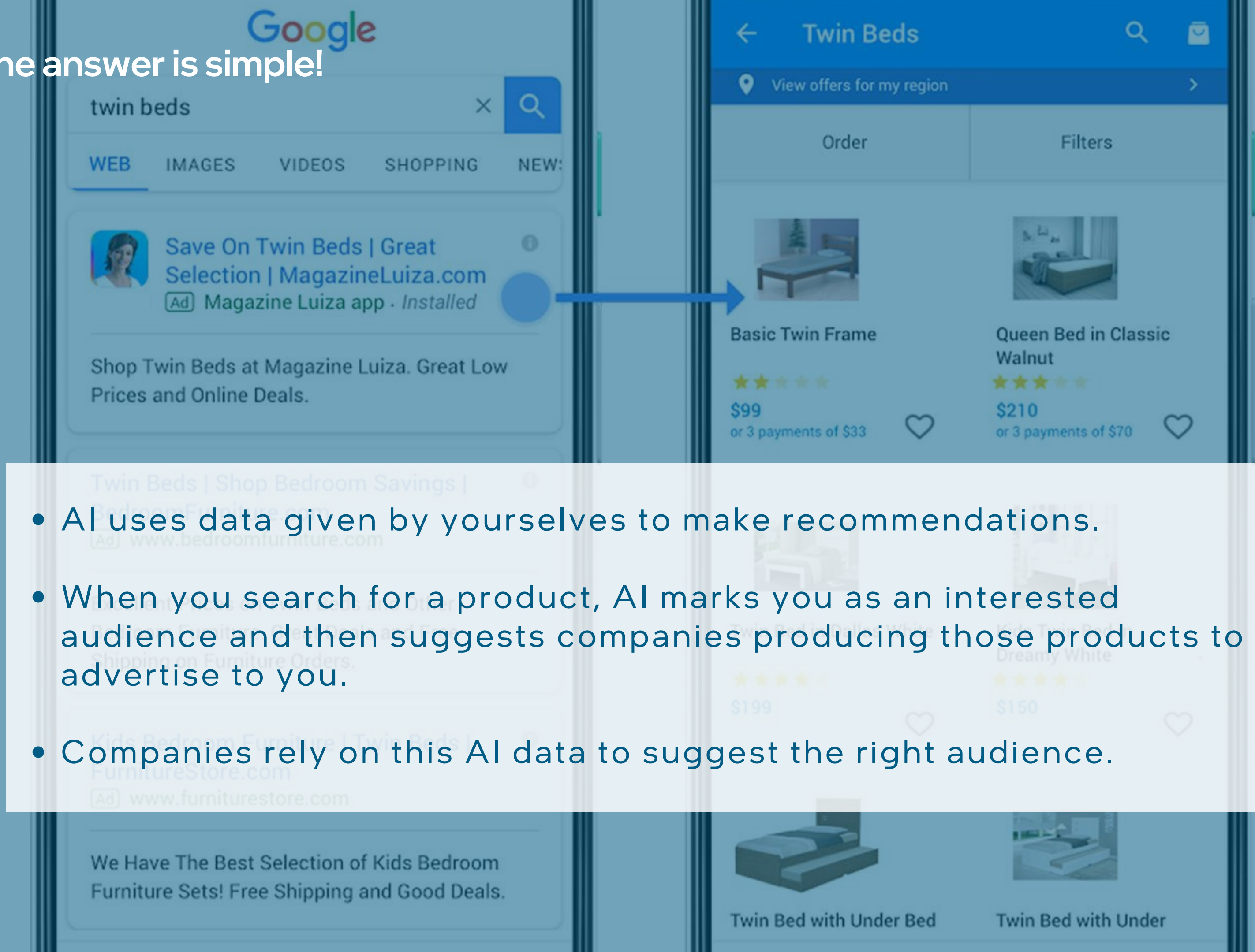
One thing we can guarantee you is that if you are a regular social media user, your advertisements are likely to be in sync with one other, else you'll get highly-paid promotional advertisements.





How does AI provide these
ad agencies with
recommendations, and how is
Statistical Data related to this?
Let us learn about this in two
simple steps!

Well, the answer is simple!

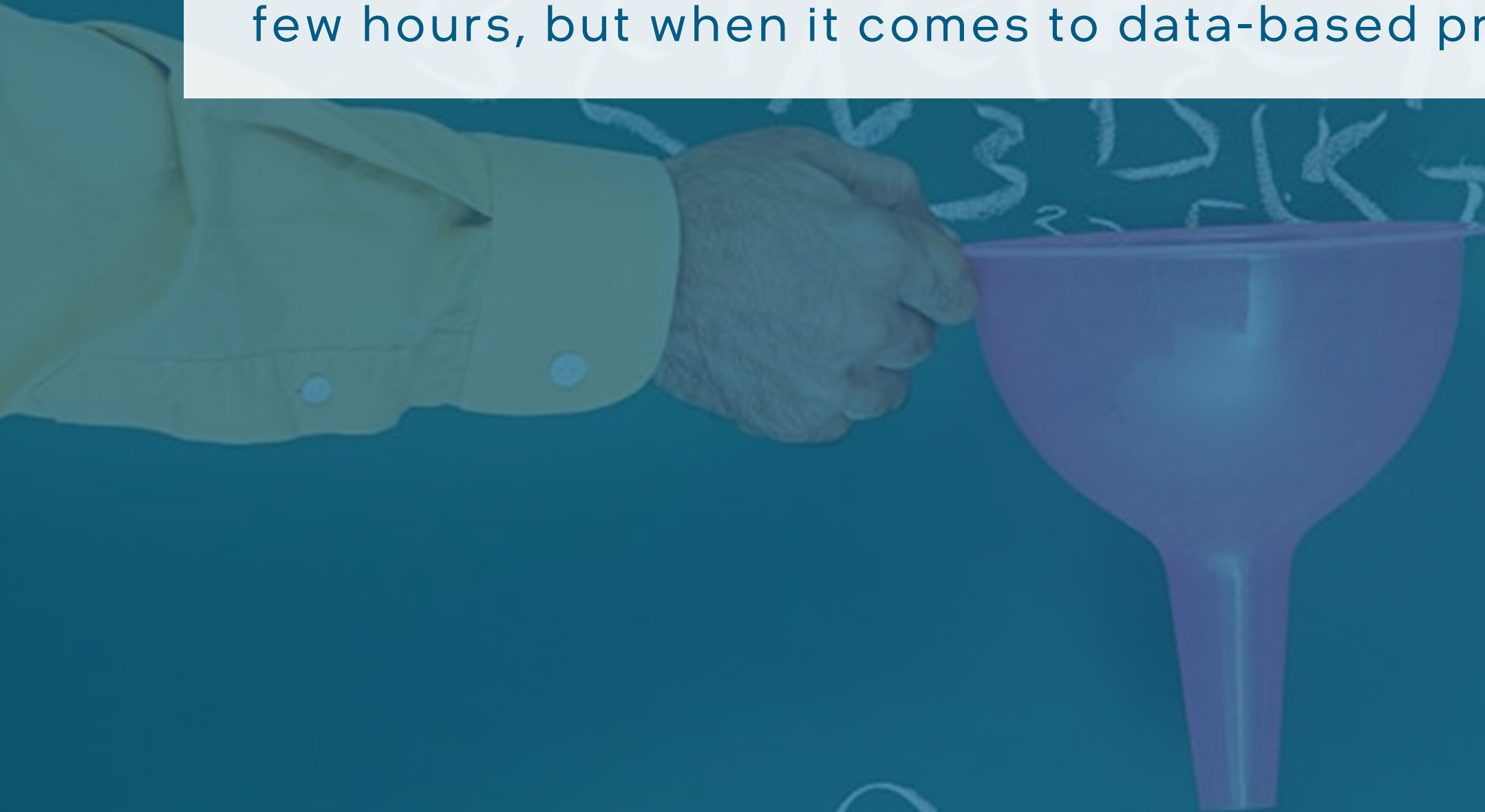


- AI uses data given by yourselves to make recommendations.
- When you search for a product, AI marks you as an interested audience and then suggests companies producing those products to advertise to you.
- Companies rely on this AI data to suggest the right audience.

- There always people doing random google searches, that data may not be relevant to the company.
- AI helps to filter the data to suggest an appropriate audience.

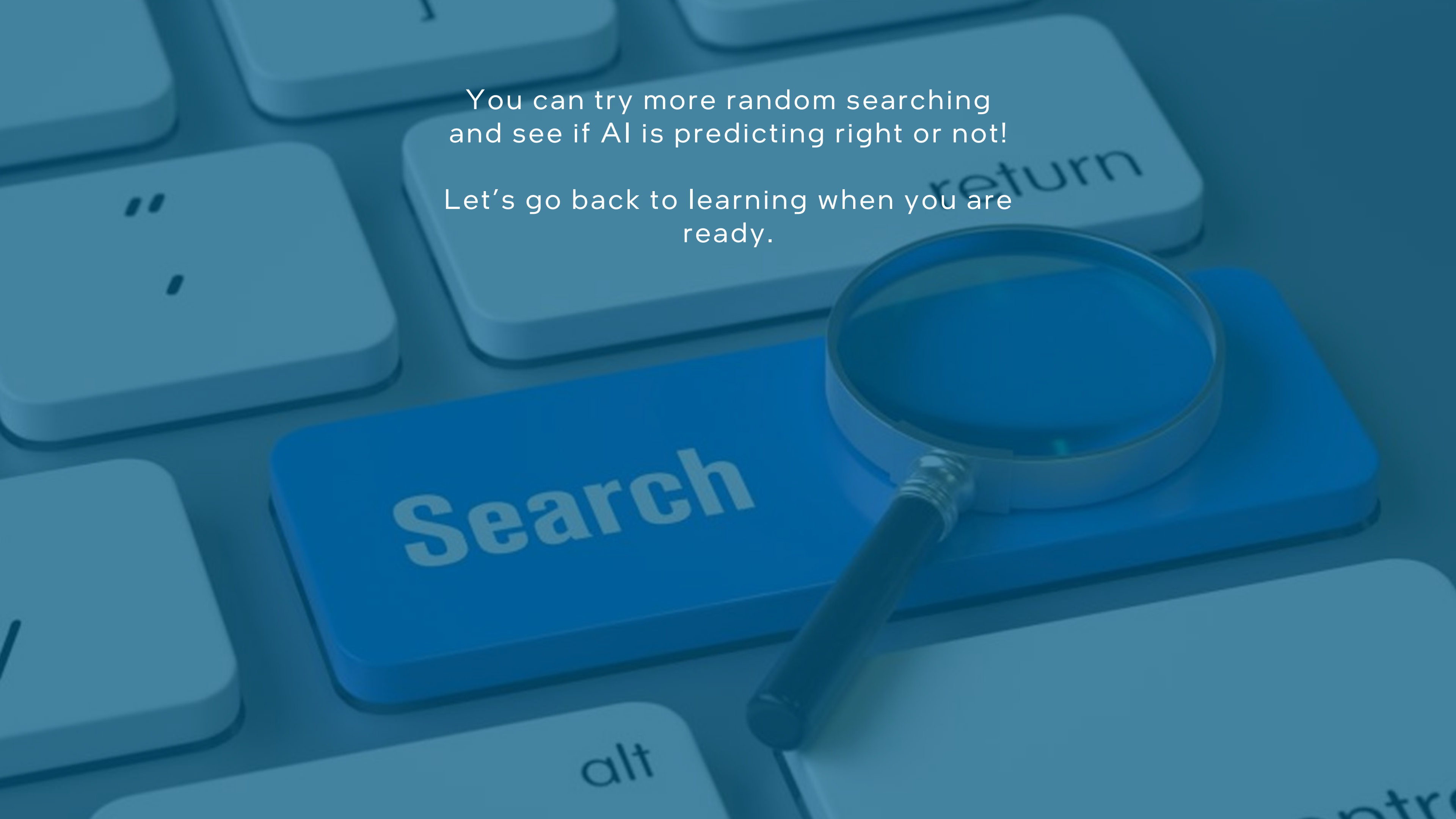
Do you think you can beat AI at making predictions?

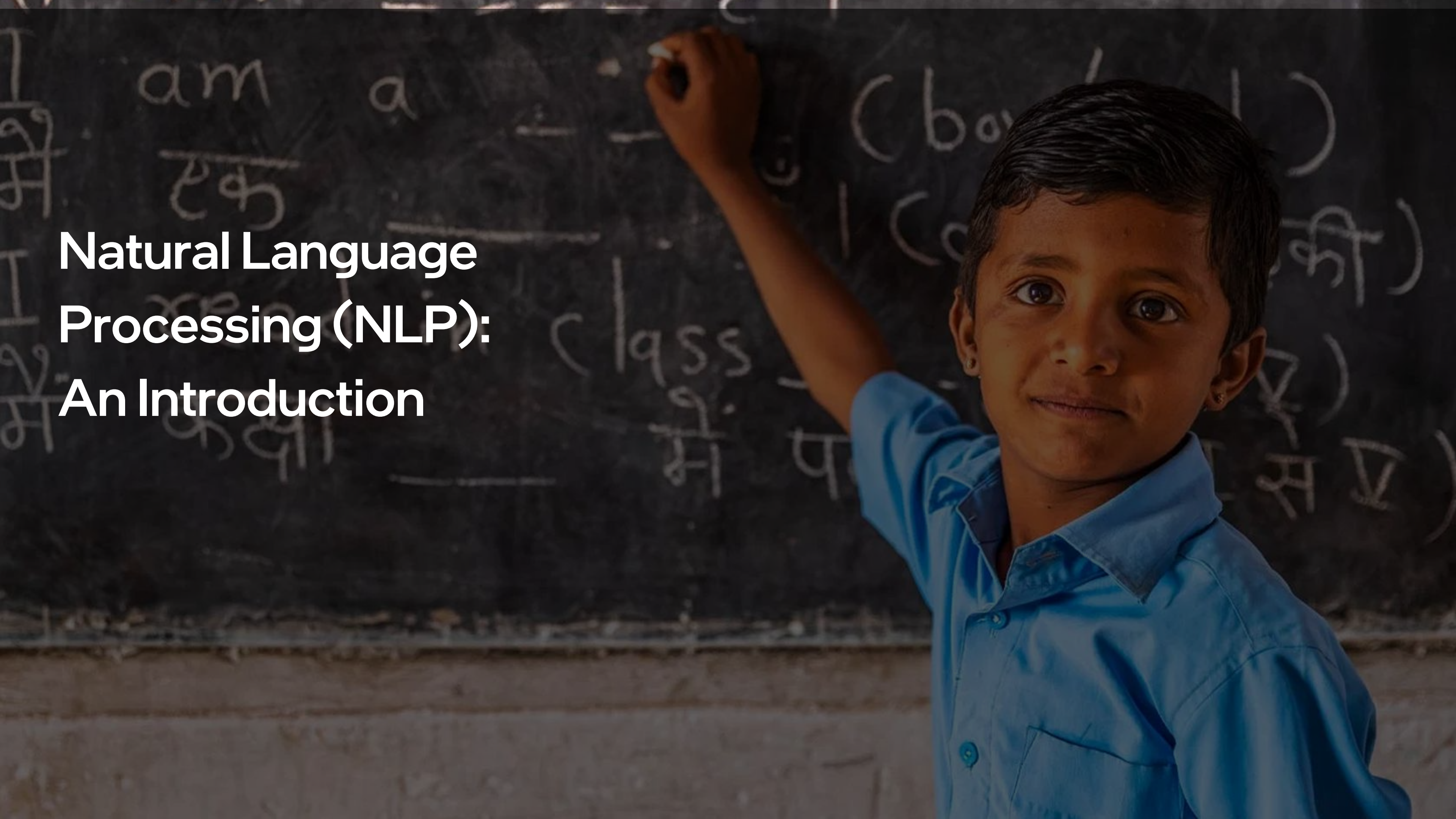
Maybe yes, when it comes to what food craving you'll have within the next few hours, but when it comes to data-based predictions, you may lose to AI!



You can try more random searching
and see if AI is predicting right or not!

Let's go back to learning when you are
ready.





Natural Language Processing (NLP): An Introduction



INTRODUCTION

1

Just as we have our own language to communicate with each other, machines have their own.

2

They cannot directly talk to us without having a translator in place. Here, the AI domain: Natural Language Processing comes into the picture!

3

As the name suggests, Natural Language Processing is the science of enabling machines to understand our language and helping them to communicate as we do.

4

To do so, applications of AI that are part of this domain work with speech or text data.

NLP: An Example

- NLP is used by service providers to provide quick assistance and support.
- The AI-enabled customer-care chatbots understand the queries asked and call out their answers from the database.
- They use intelligence to give a human-like response.
- Other applications of AI under the NLP domain include:
 - Sentiment analysis, where an AI-powered bot understands and tracks the mental health of a person,
 - Speech-text conversion,
 - Auto-correct,
 - Automatic sentence completion, and a lot more.

English language

NLP: An Activity

Hello!

Hi!

How are you?

Goodbye!

Welcome to your first-hand experience of talking to an AI. Are you excited?

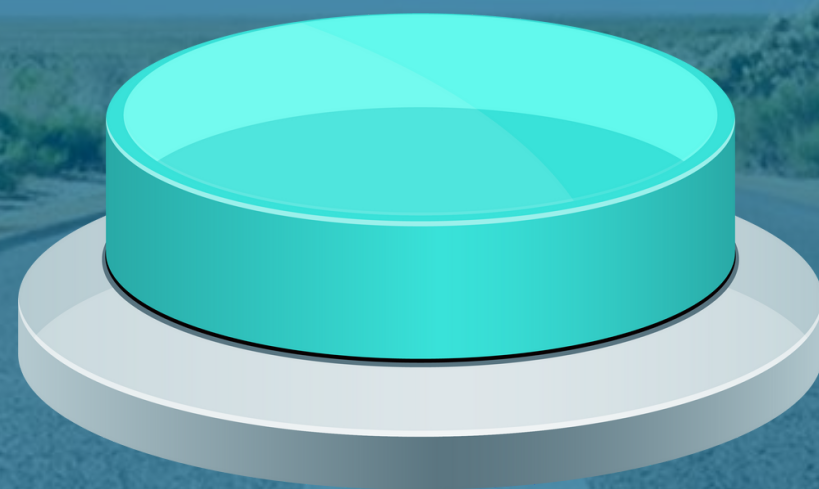
The chatbot here is a friend of Joy, it's name is Joey.

You can have fun talking to Joey about a lot of interesting topics like:

- General questions about weather
- Personal questions like - what it is feeling at the moment, how old is he, if he gets paid, if he likes you and people, what it eats or if he is married, favorite superhero or even musicians.
- You can also try asking - what language it speaks, what programming language it is built on, or if it is a computer program

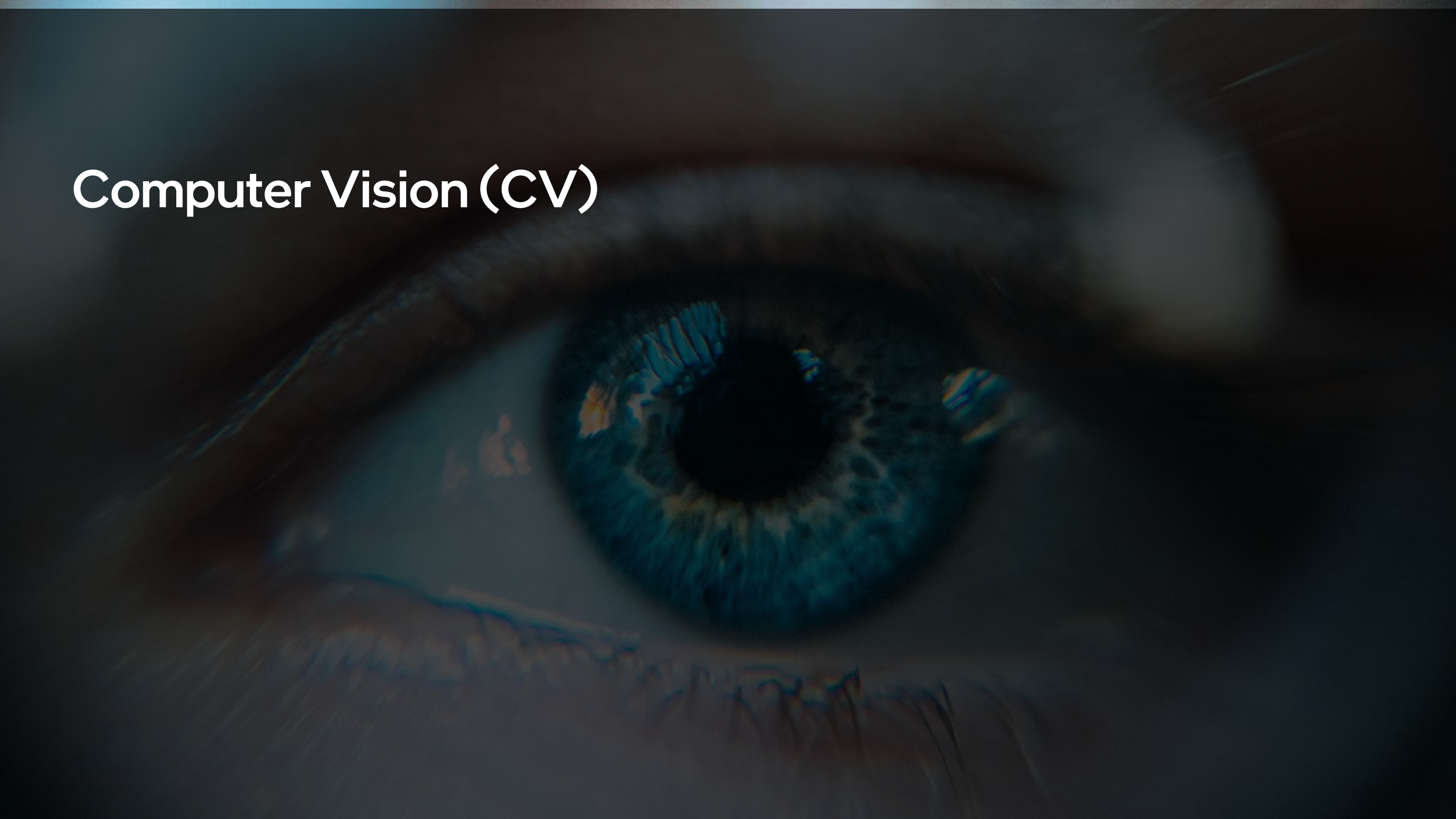
○

Ready? Let's start chatting then.

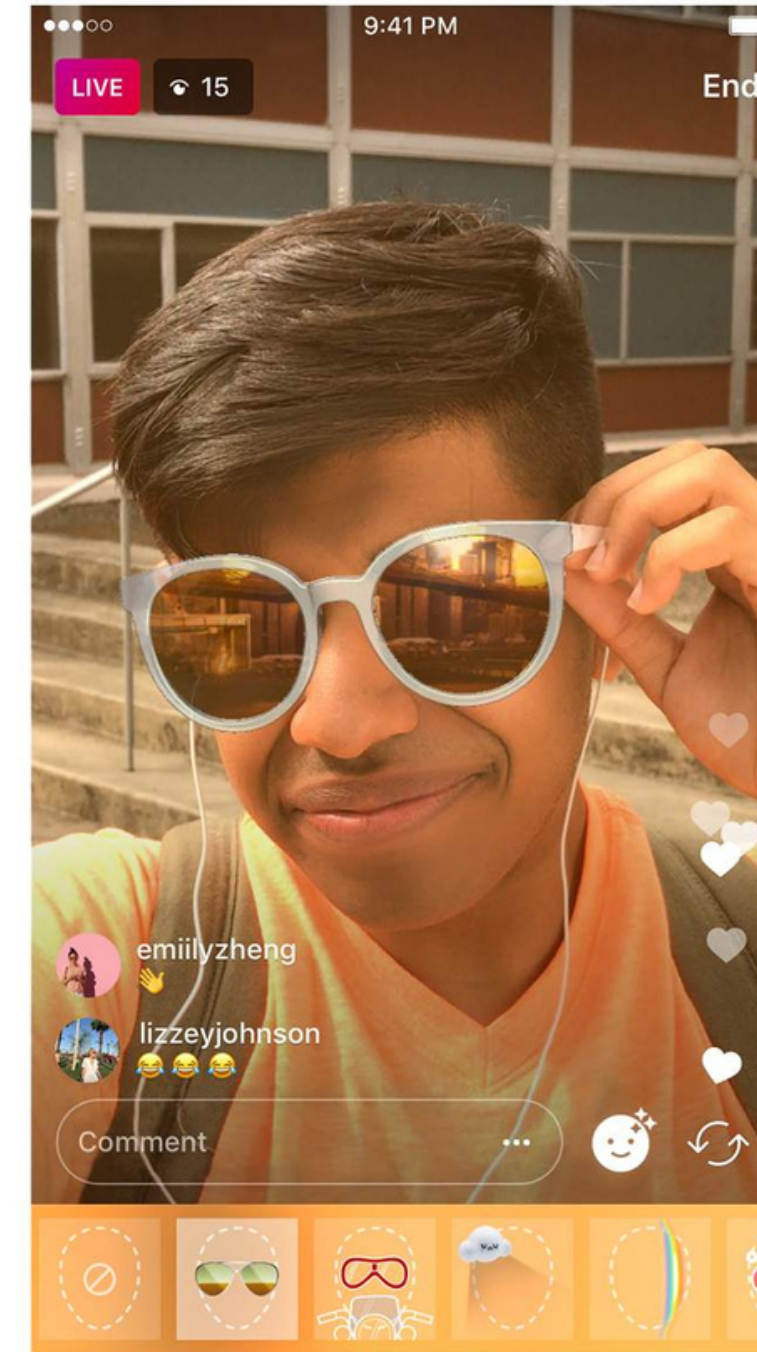
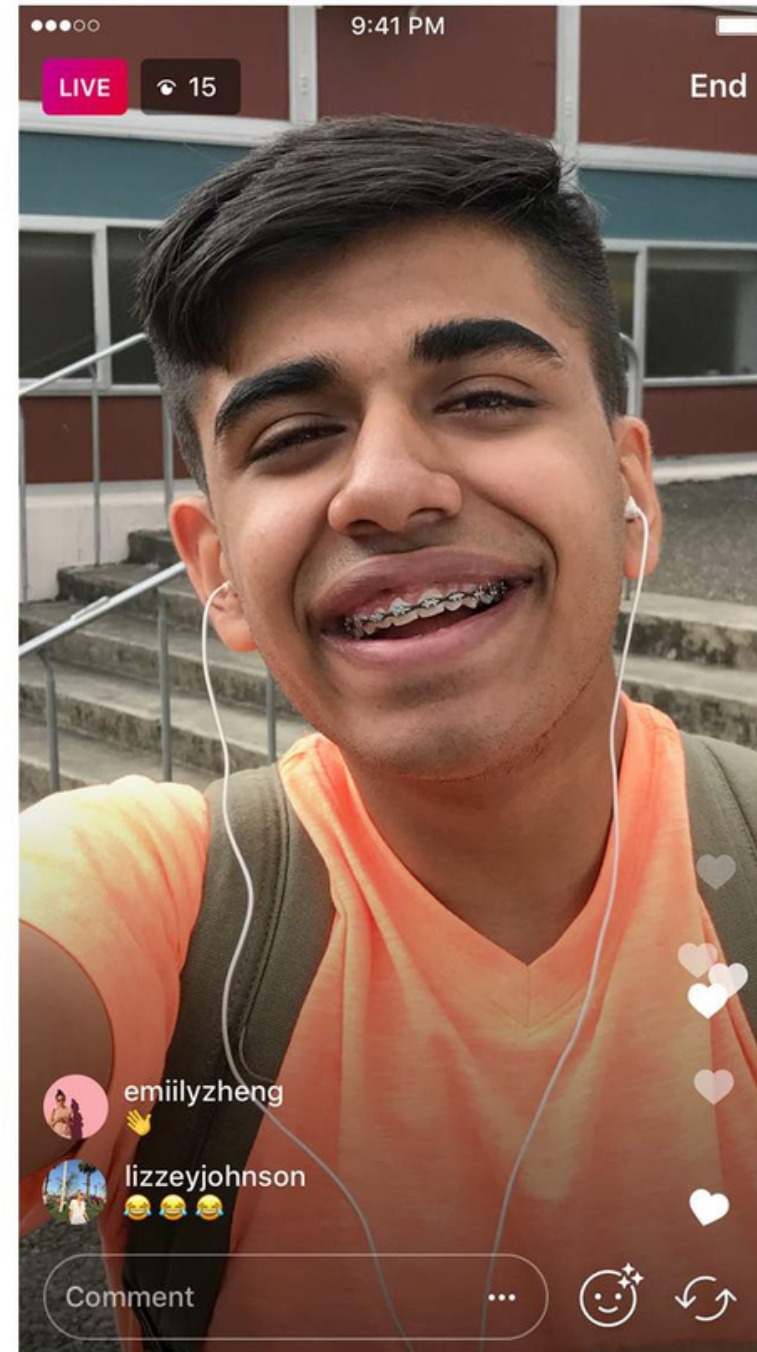


<https://ai-chatbot.sustainablelivinglab.org>

Computer Vision (CV)

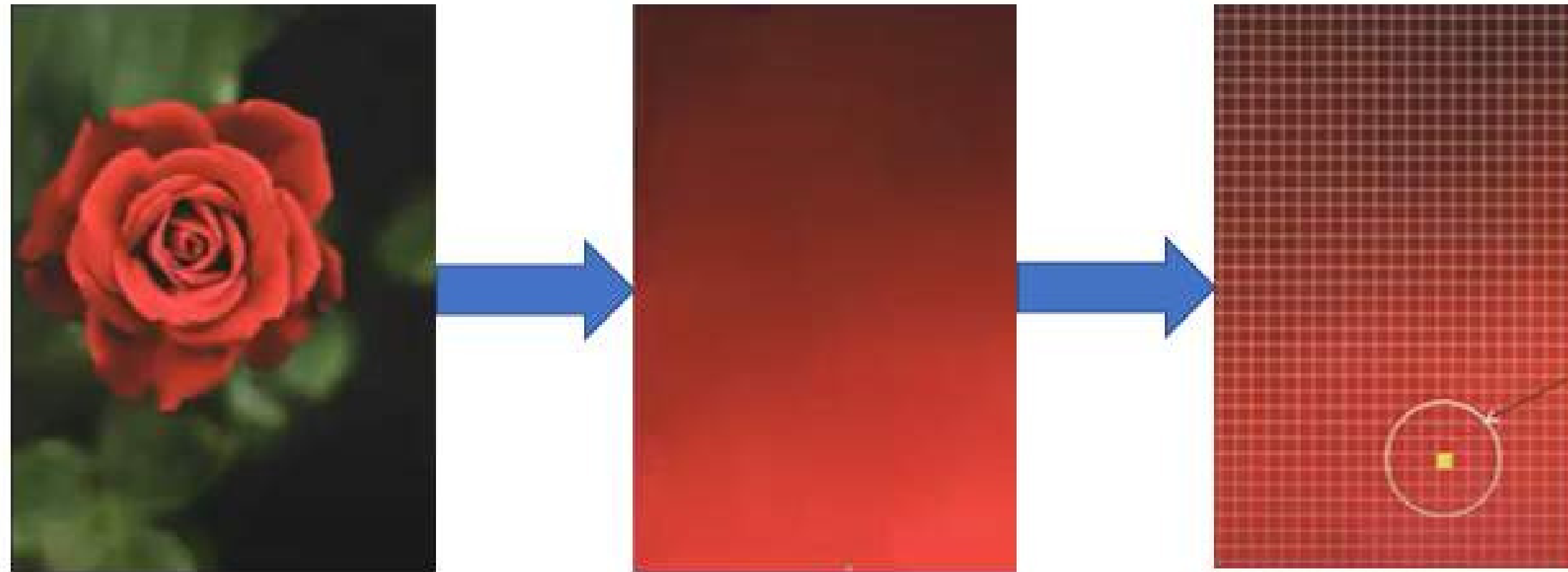


CV: An introduction



- As the name suggests, Computer Vision is the science of making machines see.
- Applications of AI that fall under this domain work with visual data like images and videos.
- There are a lot of CV based technologies that are not actually powered by AI, like your digital camera or digital TV screens!
- At the same time, we have many technologies powered by AI that use CV, like your Instagram filters or object detection in self-driving cars!

Keep Zooming



- Humans perceive sight in the form of colors and shapes.
- Have you ever heard of pixels and resolutions?
- Take a look at the picture of the rose below. If we try zooming into the petals, we will soon be seeing blurred square boxes. Each blurred square box is a pixel.



- Every pixel is a set of numbers indicating the colors that we see.
- CV is essentially the technique that the computers use to process the set of numbers that are associated with pixels.
- CV acts as a link between AI and the image or video data.



- The wide range of AI applications under this domain are:
- Security systems (face detection),
- On-screen fingerprint sensing
- Creating new artwork by combining images and more.

Why don't we go ahead and try the last example listed here?



- The objective of this activity is for you to experience and learn about Computer Vision
- You will see that AI will change the looks of an image, according to your wish, in a matter of a few seconds.

<https://artify.sustainablelivinglab.org/>