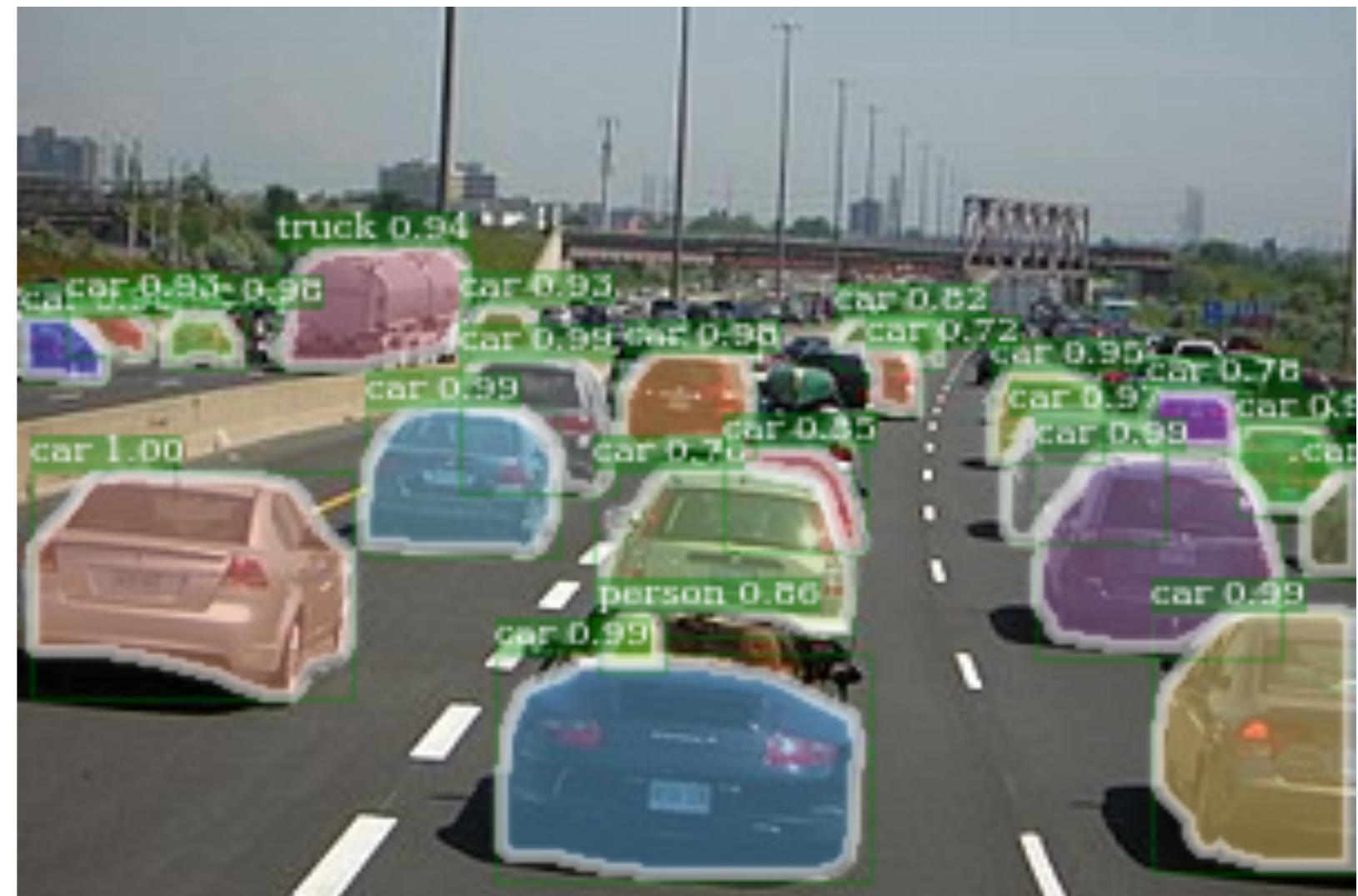


# **Lost In Translation**

James Huang

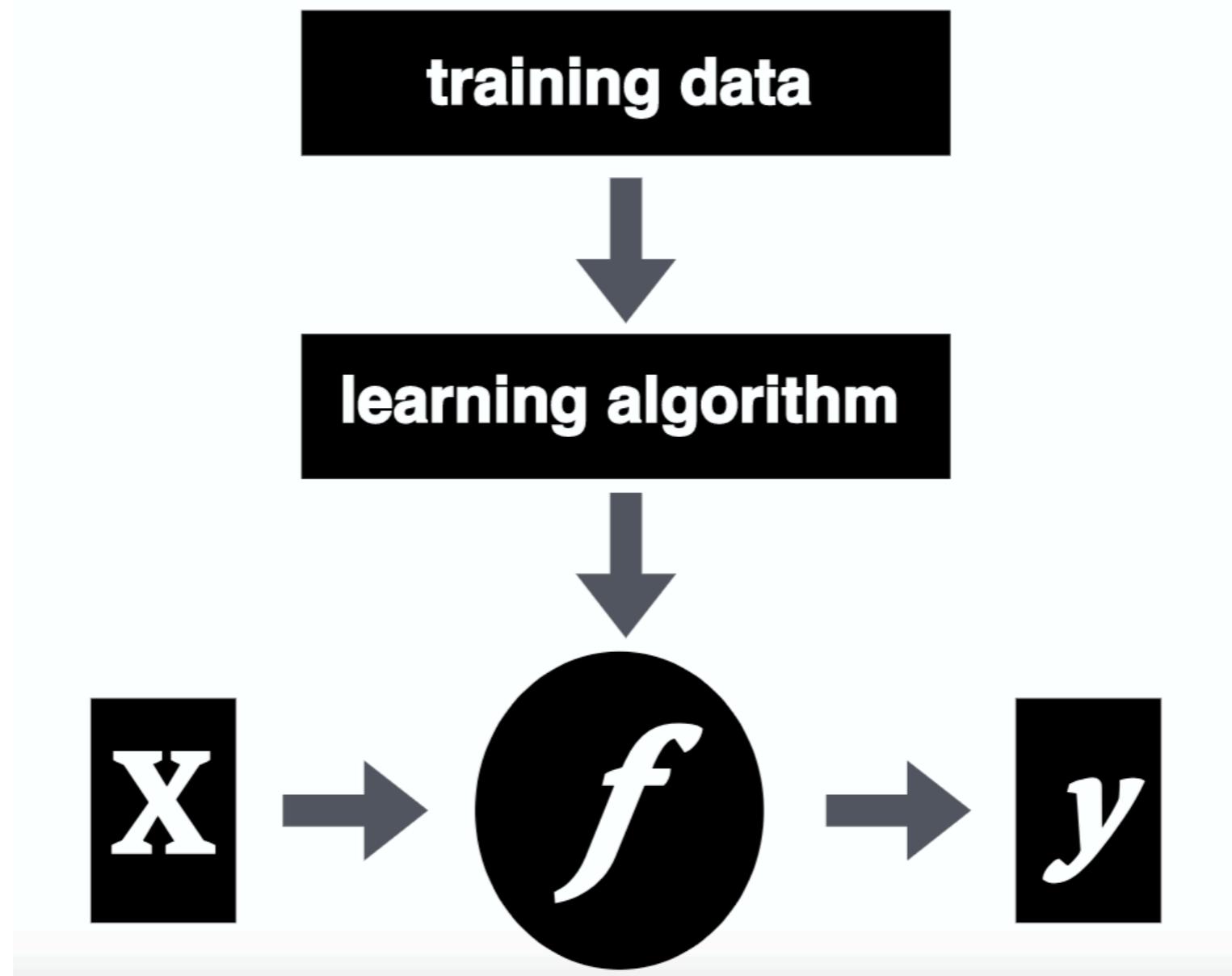
ITP class of 2019

# Machine knows



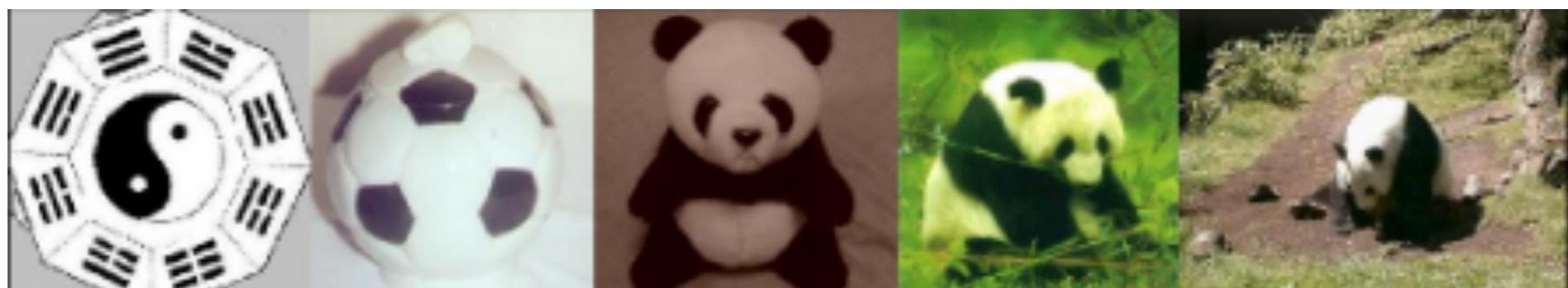
**Machine fails**





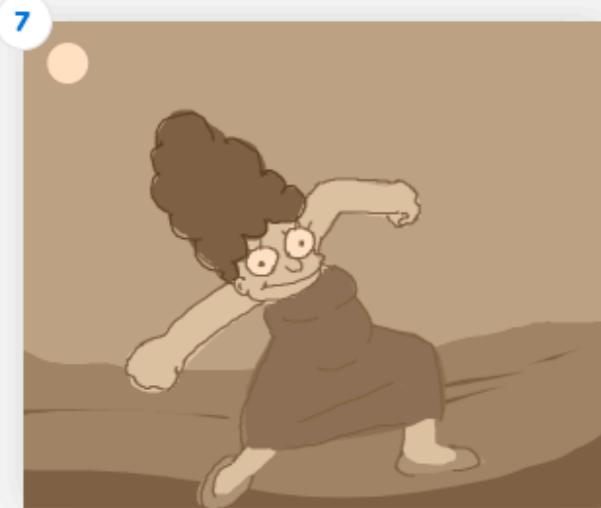
Credit: Gene Kogan

**How would a series of translations make the result different from your expectation and cognition?**



# Inspirations

# Telephone Game



SmallShibe 154 13 27 7 +



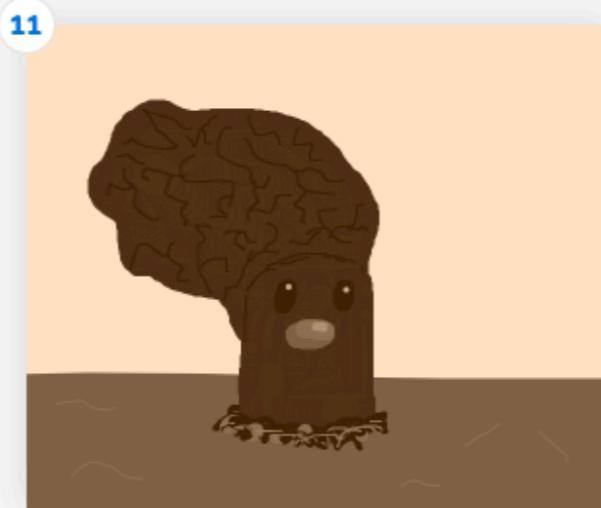
uwu moto moto likes you 24 1 +



PotatoManBLEEP... 59 13 6 +



Androkon 1 140 5 +



SagePhr... 1 108 11 6 2 +



kittenfier 9 19 +

Credit: Drawception

## Closed Loop



a large piece of paper

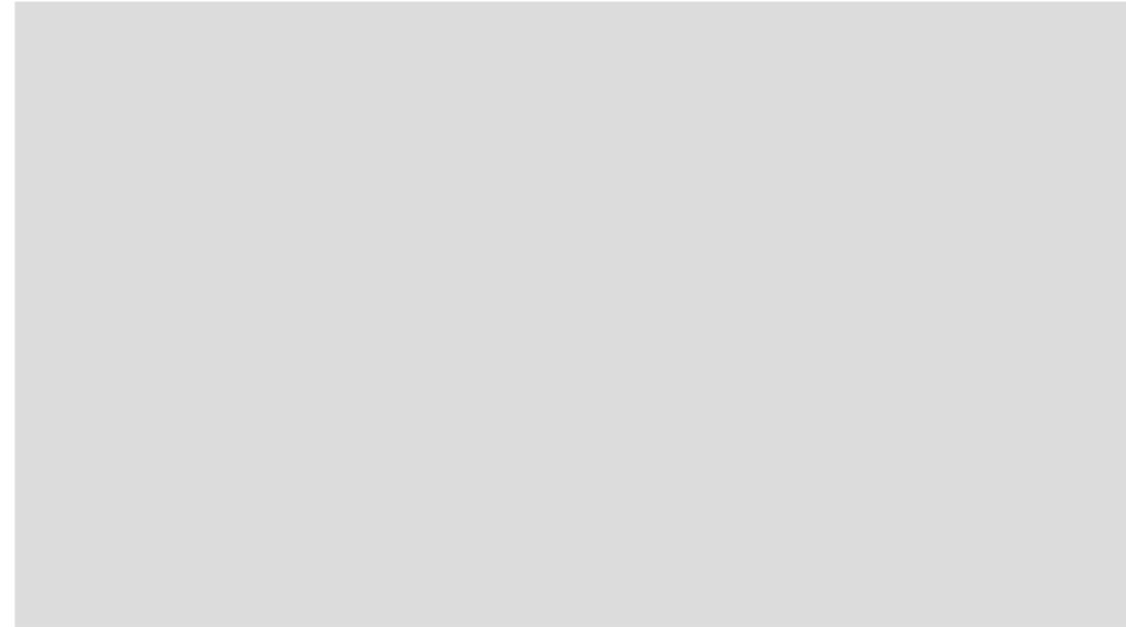
*Credit: Jake Elwes*

**Process**

**1st Iteration**

**Find out what machine is drawing**

# Find out what machine is drawing



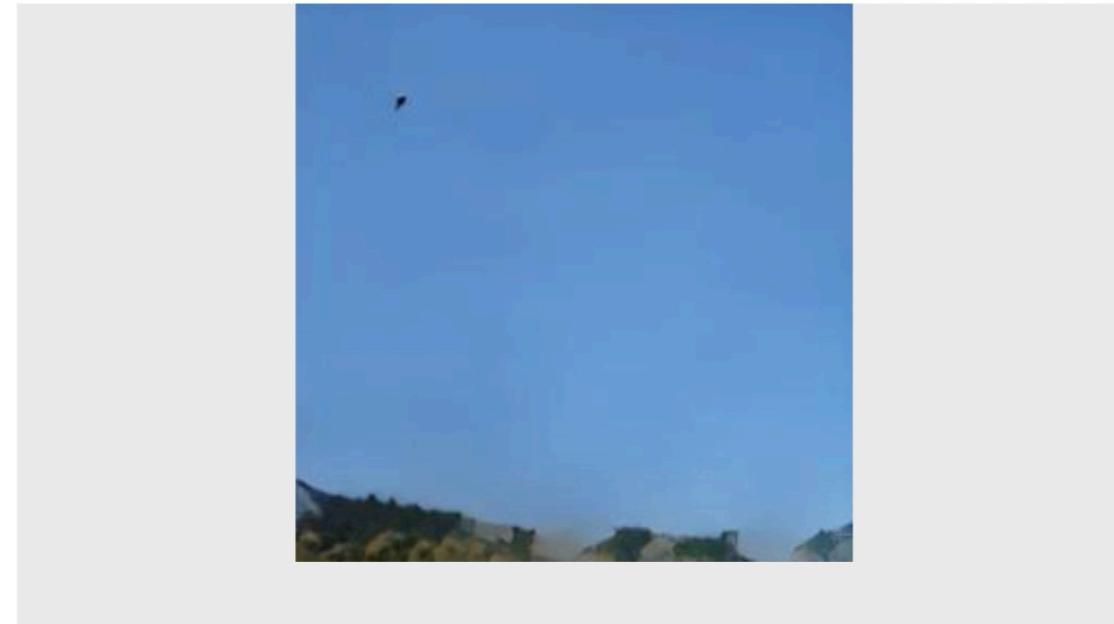
Can you tell the doodle above is created based on which image below?

[Make new art](#)

## **2nd Iteration**

**Compare your words with descriptions from machine**

# Compare your words with descriptions from machine

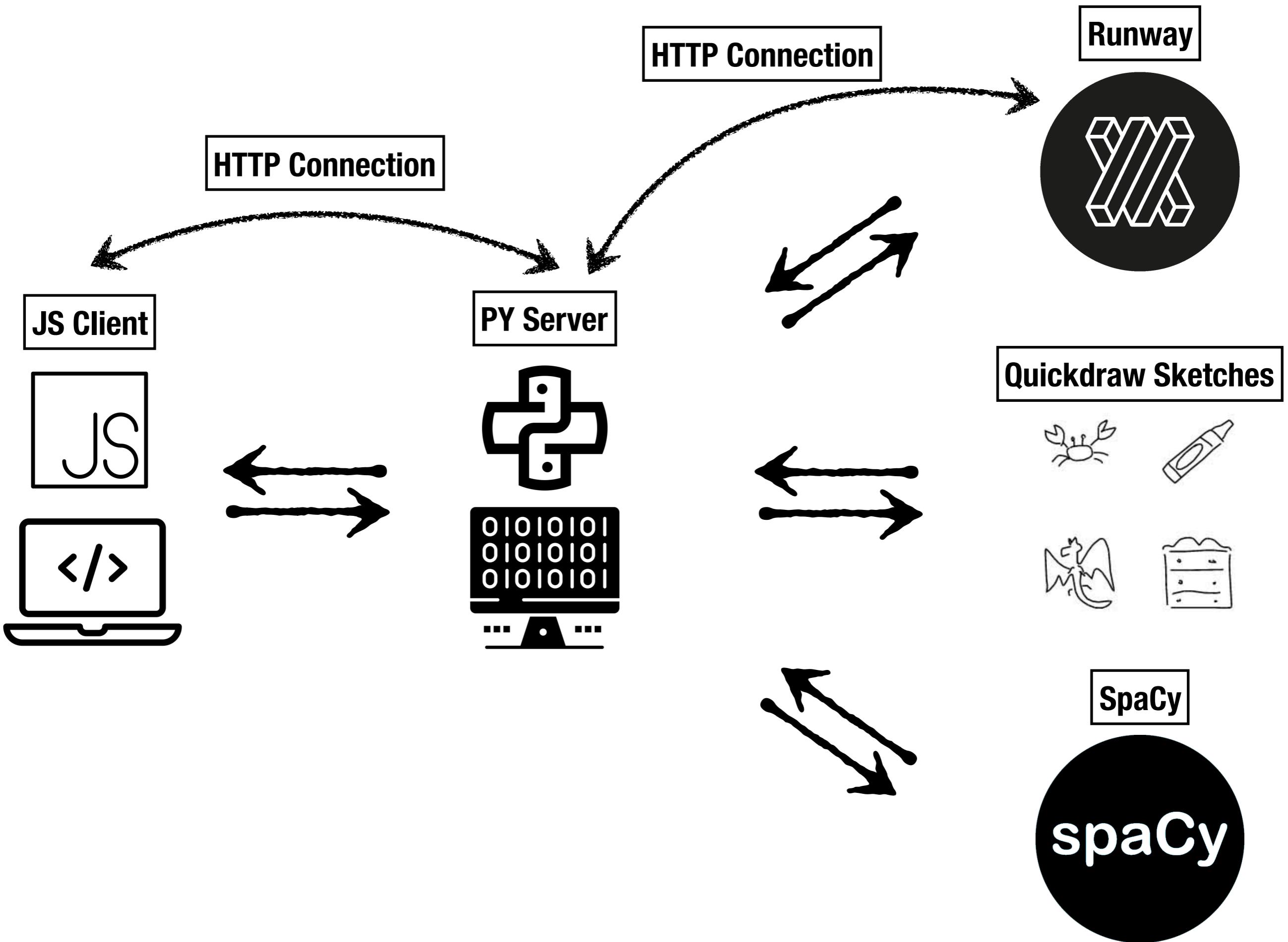


Please describe the image above in a short sentence

A text input field with a thin blue border and a small cursor icon inside. Below it is a blue rectangular button with the word "Send" in white text.

## **Final Iteration**

**A recursive process of human and  
machine interpret each other's results**



# Human (Client)

# Computer (Server)

## Start Page

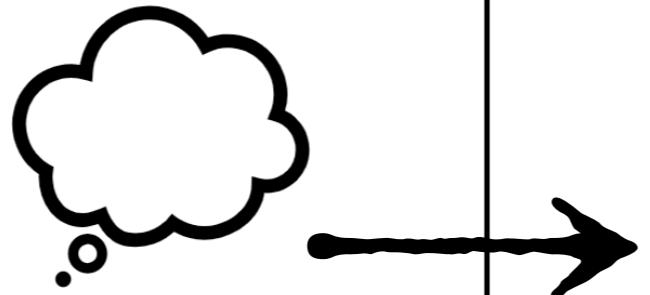
Lost in Translation

### How does machine think differently from you?

Machine learning can be treated as a translation process. The imperfection of machine learning makes information loss.

Let's try by describing the image generated by machine and see how the machine take your words and translate into a new image.

Start



# Human (Client)

## Start Page

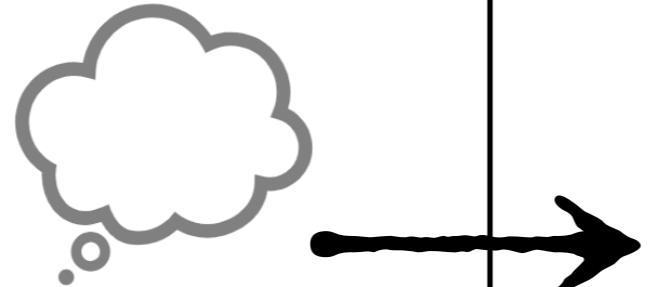
Lost in Translation

**How does machine  
think differently  
from you?**

Machine learning can be treated as a translation process. The imperfection of machine learning makes information loss.

Let's try by describing the image generated by machine and see how the machine take your words and translate into a new image.

Start



# Computer (Server)

## Randomly pick an image



# Human (Client)

# Computer (Server)

**Describe the image**

Lost in Translation



What do you see from the image?

Send



# Human (Client)

# Computer (Server)

Describe the image

Lost in Translation



What do you see from the image?

a bicycle is in the middle of the road

Send

Pick nouns

127.0.0.1 - - [02/May/2019 15:55:02] "PO  
**Description Received:**  
**a bicycle is in the middle of the road**  
  
**Getting nouns in the sentence...**  
  
**Nouns in the sentence:**  
**[bicycle, middle, road]**

# Human (Client)

## Describe the image

Lost in Translation



What do you see from the image?

a bicycle is in the middle of the road

Send

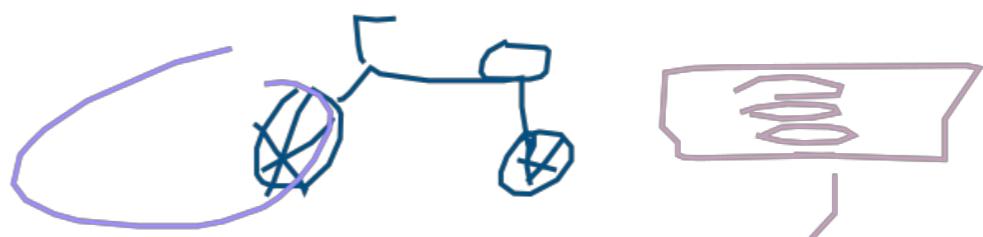
# Computer (Server)

## Choose Sketch Categories and draw the sketch

Nouns in the sentence:  
[bicycle, middle, road]

Objects to draw:  
['bicycle', 'circle', 'traffic light']

Drawing the sketch...  
Finish drawing



# Human (Client)

# Computer (Server)

Describe the image

Lost in Translation



What do you see from the image?

a bicycle is in the middle of the road

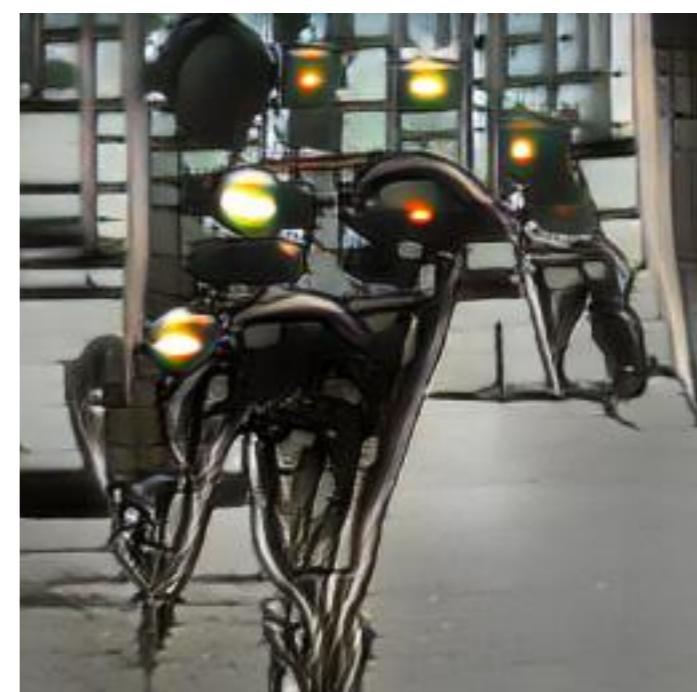
Send

**Send the sentence to AttnGAN  
Receive the generated image**

Connect to Runway AttnGAN

New sentence:  
a bicycle is in the circle of the traffic light

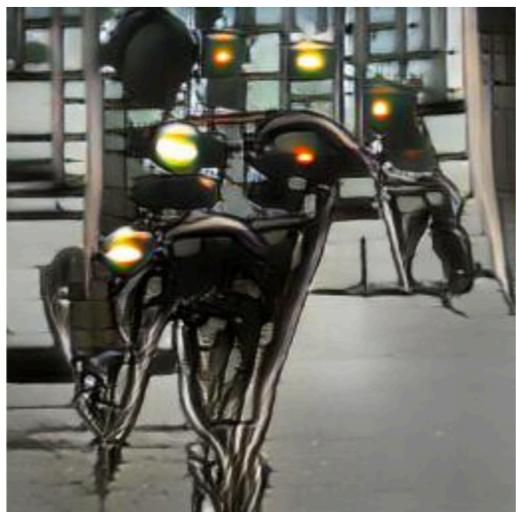
Sending data to AttnGAN  
Processing...  
Received New Image



# Human (Client)

**Describe the image again**

Lost in Translation



What do you see from the image?

Send

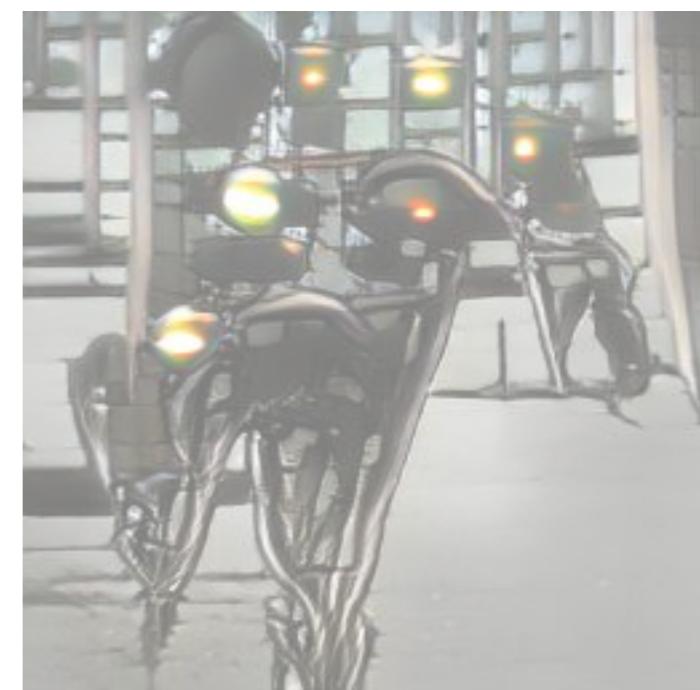
# Computer (Server)

**Send the sentence to AttnGAN  
Receive the generated image**

Connect to Runway AttnGAN

New sentence:  
a bicycle is in the circle of the traffic light

Sending data to AttnGAN  
Processing...  
Received New Image



# Human (Client)

**See the full translation story**

**Lost in Translation**

**What You See**



**What Computer Draws**

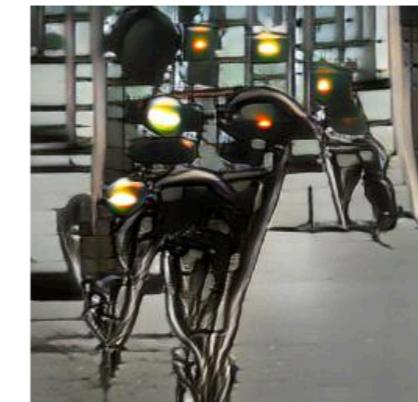


**What You Think**

a bicycle is in the middle of the  
road

**Next  
Round**

**What Computer Interprets**



# Human (Client)

**See the full translation story**

**Lost in Translation**

**What You See**



**What Computer Draws**



**What You Think**

several stage lights are  
connecting together



**What Computer Interprets**



# Human (Client)

**See the full translation story**

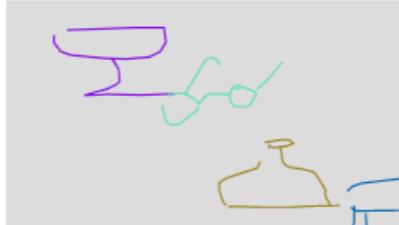
**Lost in Translation**

**What You See**



←

**What Computer Draws**



Go  
Rating

**What You Think**

broken wine glasses and  
bottles on the table

**What Computer Interprets**



**Human (Client)**

**Rate the machine**

**Lost in Translation**

How similar does the machine think like you?



**Play Again**



## **NEXT STEPS**

**More reasonable process**

**Make the rating better (or not)**

# **THANK YOU**

**Daniel Shiffman**

**Gene Kogan**

**Jake Elwes**

**Cristóbal Valenzuela**

**Davi Geiger**

**Patrick Hebron**

**Sam Lavigne**

**Hayley Hwang  
and  
Rushali Paratey**

**My Thesis Group**

**All ITPers**

**My Family**

**Alan Peng**

**KaiChe Hung**

**YenAn Chen**

**Jim Hsu**

**John Chiao**

**Phoebe Su**

**Mark Jhang**