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Apophenia¹ and Sisyphus Dataset²

Colophon

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Unmake Lab is interested in new phenomena in humans, technology, nature, and society and unfolds them into exhibitions, education, and research. In particular, they observe how emerging forces work for us under the influence of data and algorithms. They are recently working on passing those forces through a specific algorithm and outputting them as different narratives.

1
Apopheia is the cognition work to perceive connections between unrelated things. This article is about apopheia, including pareidolia, its subordinate concept, which is a psychological phenomenon that makes people find familiar shapes in an irregular shaped image. It is also used to account for the moment when the strange correlation extracted by artificial intelligence gives us an unfamiliar perception.

2
A dataset is a collection of data made to train artificial intelligence for a specific purpose.

3
Artificial Vision is ongoing research by Unmake Lab regarding the point of view of artificial intelligence. In the research, webcam images were taken every two seconds and analyzed in real-time in the cloud through computer vision API to produce the top 15 real values. It took place at the studio and outdoors.

4
Computer vision could be called a form of artificial intelligence that view and analyze visual data. These days, it tends to improve with intelligent CCTV regarding object identification, detection of product failures, and crime prevention. In this article, the terms artificial intelligence vision, machine vision, and computer vision are used as the same meaning.

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However, the assumption that it should recognize things accurately could assert all datasets and algorithms' universality. Thus, the failure of the artificial intelligence vision mentioned in this article is not for criticizing the biases of the computer vision used in the research.

6
Data labeling is a process of sorting and refining data to train artificial intelligence. In general, it signifies the operation in which people attach a tag to data or annotate data. Since it is the underlying technology that allows artificial intelligence to analyze more accurately, numerous data are labeled through an intermediary of the platform specializing in this kind of work. On the other hand, there are attempts to approach this in a semi-automatic and automatic way and make artificial intelligence learn unlabeled data.

The Object Calculated as Probabilistic Possibility

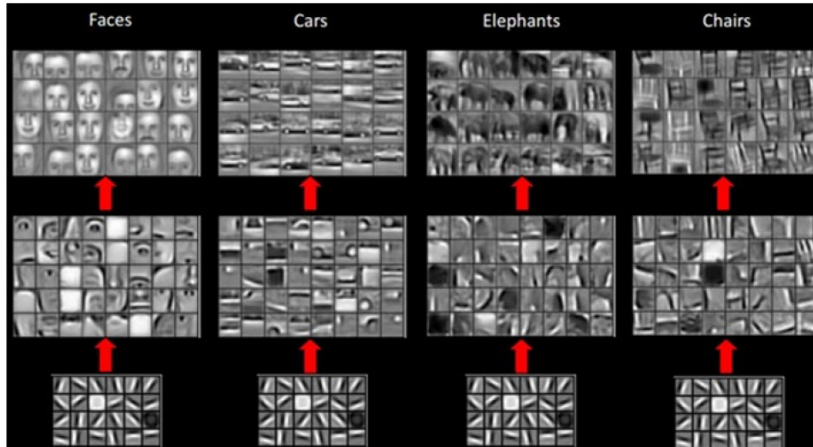


Unmake Lab, *Artificial Vision* (2019), AI vision for pose research³

The person standing in front of the green screen changes the pose in many ways. The poses are recognized by artificial intelligence as objects whose identities are different from each other. Artificial intelligence recognizes the one standing at attention as a "human being" by the figure of around 42 percent, the one stretching out limbs as "dancer" by the figure of approximately 98 percent, the one lifting a dumbbell with two hands as "golfer" or "player," and the one putting hands on one's waist as "attractive."

When we first encounter the data value converted from the visibility produced by computer vision,⁴ we feel embarrassed like we face a different perceptual system. However, once we understand that the numbers mean probability like "The subject in the front must be a dancer at a 98 percent probability or could be a golfer at a 55 percent probability," the result looks like the incoherent informational reification of things or hard-edged perspective quantified supremely. On the other hand, while we search for the meaning of result values produced by the visual technology analyzing potentialities of images, we feel like we are playing a game where players look for an animal form among clouds. The visual machine seems to acquire its ideal function, the brain's extension, beyond an optical prosthesis level.

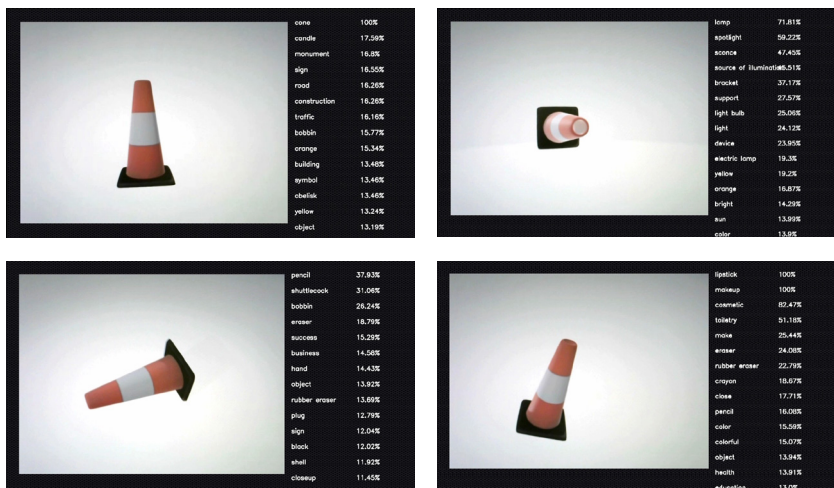
These thoughts reveal to us that it is a unique visual system. It makes us observe how different it is from our anticipation, stereotype, and prejudice. Then we find out that it is learning a specific geopolitical directionality. For example, this machine vision does not rightly identify women with short hair, including the Asian woman in the research, as woman or female.⁵ It is unclear whether the result comes from its insufficient data for Asian women or various female looks. Therefore, this observation makes us interested in the algorithm by which this machine vision processes data labeling⁶ and the new social and visual system it constructs.



The visualization of CNN's image recognition process

Let us lift a veil of the excitement of artificial intelligence and take a peek inside. Concerning the visual technology of artificial intelligence or computer vision, an algorithm called CNN(Convolutional Neural Network)⁷ is the basis in most cases. Through data, CNN "learns" countless object images and trains features such as outlines, edges, color patches, and patterns in the form of filters. Therefore it could be said that it returns a probabilistic confidence value when it recognizes a new object by categorizing it through the trained filter. In this stage, we "feel" that artificial intelligence is seeing.

When the basic visual system of CNN is understood, the reason why it returns an inconsistent result value for a traffic cone whose phase changes as follows is estimated. In other words, if it does not learn the data of all aspects of an object, artificial intelligence's recognition result of it would be wrong. As shown below, it recognizes traffic cone as a different object like lipstick, lamp, and eraser, depending on the phase change.⁸



Unmake Lab, *Artificial Viewpoint* (2020), AI vision research according to the phase of objects

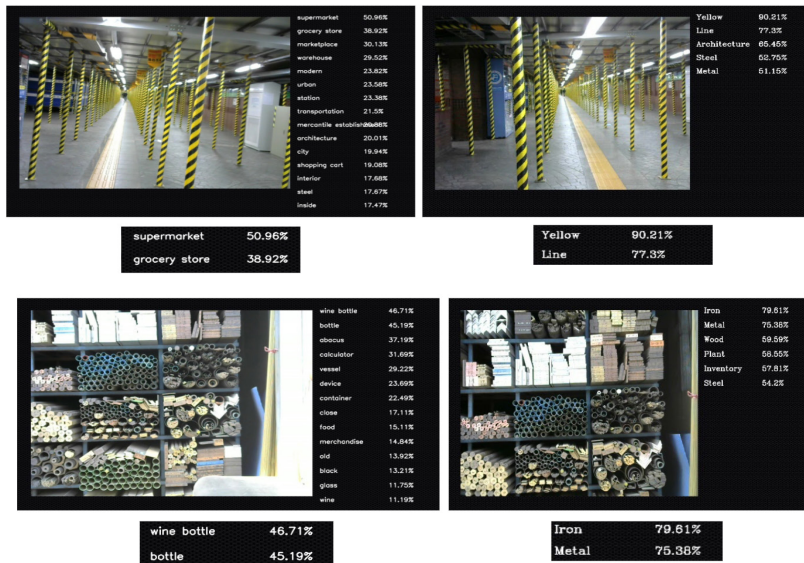
Even though the underlying neural networks are the same, there could be a big difference in artificial intelligence's analytical capabilities, depending on the data tech companies have. The research below reveals the differences in analyzing urban images with two computer vision technologies.

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The neural network which Yann LeCun presented at AT&T Bell Labs in 1989. Geoffrey Hinton has contributed to computer vision technology advancement by releasing a more evolved algorithm like AlexNet based on it in 2012. CNN cannot accurately recognize the viewpoint change of things like the error recognition results in the article unless it learns various aspects of things from many different angles. There are attempts to compensate for this utilizing the technology called capsule network.

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It brings about a strange reminder of the originality indicated by objects' fixed status in human culture.



Unmake Lab, *Artificial Viewpoint* (2020), AI visual comparison study on urban space(left A, right B)

A recognizes the pipes piled in the forge in Munrae-dong, Seoul, as wine bottles, whereas B classifies them as iron more accurately.⁹ It could mean that the difference is rooted in the quantity and type of retained data. Unfortunately, it seems that among the data that A has trained, a wine rack is most similar to the image. However, for a global IT company that stores street view images of remote areas to which even humans have never been, Asia's urban image, which is unusual these days, would not have been a big problem. Let us see another image. A sees an ambiguous space (actually a construction site) in a subway station in Seoul as a supermarket. In contrast, B only returns abstract result values such as color, not designating a specific place. B made by Google returns much more accurate result values for objects and landscapes, but at the same time, it returns vague and abstract result values for obscure images.¹⁰ At this point, the misleading analysis' vulnerability preferably has a significant implication that allows us to look at a technology's backside and speculate the process.¹¹

"Messy" Data World and Apopenia

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There are two computer vision APIs in the research, A serviced by Imagga, a computer vision specialized company, and B by Google. This article mainly quotes the images which contain A's result value. Because A relatively frequently returns a wrong result value, and that failure is more indicative of the other side of an artificial intelligence visual technology like dataset learning.

After grasping the computer vision mechanism to some extent, there is a pleasure to see new connections of things through a machine's eyes.



Unmake Lab, *Ecosystem* (2020), performance video

The performer wearing the zebra pattern cloth keeps moving. The artificial intelligence eye uncovers what is latent in the image that changes according to the performer's movement, like its pattern, color, and shape more precisely. It classifies the performer as a wild zebra, a cowboy boot, a sofa, or a pillow and returns a probabilistic confidence result. Due to this unique limitation of CNN, we realize an utterly different correlation through

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The research frequently observes that Google vision often returns the result values for relatively obscure images only by color.

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Therefore, the images presented in this article are the results of computer vision A unless otherwise stated.

learning artificial intelligence. These dividing lines often reveal differences in cultural, geographic, and political positions. Perhaps a dataset is a field for debating vigorously over the emerging order. Furthermore, when we see video datasets containing human actions and gestures for machine learning, it leads us to the exciting interface field only seen in this era. All kinds of human actions and gestures are turning into data for machine learning there. As mentioned earlier, the world is classified and annotated through these datasets' organization. Artificial intelligence can learn to see also by them. Therefore, the creation of these datasets is not just a computer scientific process. It is involved with countless issues related to "what and how to see."

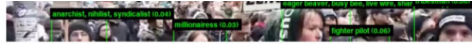


Datasets: *ImageNet* (left), Microsoft's *Coco Dataset* (right)

In this structure, not only what datasets are made but also how data is labeled can be a principal issue. Especially about the labeling work, the risk of inheriting false norms and perceptions has always been warned, anticipated, and verified. This aspect is encouraging the debate about the political nature of a dataset recently. Writers such as Trevor Paglen pointed out the biased labeling of the *ImageNet* database for human data through the *ImageNet Roulette* project¹⁵. After this project, 600,000 of the 1.5 million images of *ImageNet*'s people category disappeared.

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The *ImageNet Roulette* site is currently closed. However, the site below provides a broad outline of the project. <https://www.excavating.ai/>

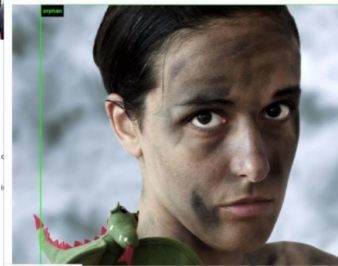


ImageNet Roulette

It is a provocation designed to help us see into the ways that humans are classified in machine learning systems. It uses a neural network trained on the *ImageNet* dataset which has over 2,500 labels used to classify images of people. *Net Roulette* regularly returns racist, misogynistic and cruel results. The underlying data set it is drawing on, which is *ImageNet*'s "person" categories, *ImageNet* is one of the most influential training sets in AI. This is underlying problems with how AI is classifying people.

UPDATE: IMAGENET ROULETTE HAS ACHIEVED ITS GOALS

Starting Friday, September 27th this application will no longer be available online.



ImageNet Roulette site and a photo showing how a portrait is classified through the site

The word in the green box says the person in the picture is "orphan."

(www.diyphotography.net)

The deletion of *Tiny Images* dataset this year, which consisted of 80 million image data, also shows the same problem. This dataset, created by MIT researchers in 2006, had been used without any problems. However, after the article's publication this year criticizing its contemptuous tagging to blacks, women, and Asians, the researchers apologized and closed the dataset.¹⁶

On the one hand, new perspectives on the dataset have emerged. *Coco Africa*¹⁷ as its name indicates, is a dataset that responds to Microsoft's *Coco Dataset*. It is a project that reminds us of the culture and visuality that cannot be explained as a problem with bias. Considering that the *Coco Dataset* is for artificial intelligence to learn things in everyday

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<https://victordibia.github.io/cocoafrica/>

life, *Coco Africa's* goal becomes clear. It focuses on the landscape, activities, and objects that are more likely to be observed in Africa and underrepresented in the existing dataset.

In a broader context beyond the problem with biases that datasets create, these approaches also remind us to rethink the data and algorithms in which common perception and the illusion of control work. In the end, this is not different from the request, which we have discussed so far, to look deeply into the social, cultural, historical, and geographical context.



People who do not exist (thispersondoesnotexist.com)

These days, we can also encounter other interesting data. "This Person Does Not Exist" site continually creates and updates virtual faces based on human face data. These images were produced based on GAN (generative adversarial network). When those were released, many people were surprised by their high resolution and realism. These faces were collected and have become a free dataset without portrait rights, waiting for another use in the future. The vision of artificial intelligence enters the new stage of creation beyond merely recognizing objects. Besides, the images created in this way are newly composed as data for artificial intelligence learning. Interestingly, the feedback is not composed of the present or the past. It seems that it is made by predicting the future¹⁸ and goes back to the present. Then, what system does this feedback create? It might be just a possible model. However, we could sense that this feedback would bring a wholly different system that we have not experienced.

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There would be no reason to regard the speculative nature of artificial intelligence as 'futuristic' necessarily. It might be speculation about the past or a completely different dimension. However, in this article, artificial intelligence's speculative nature based on extensive data is regarded as an attempt to predict the future, which does not consider historical and social contexts.

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The stones were collected from various sites. However, many of them were from the vast sand mountains (Moraedukgol) in Yeosu created by the Four Major Rivers project 10 years ago.

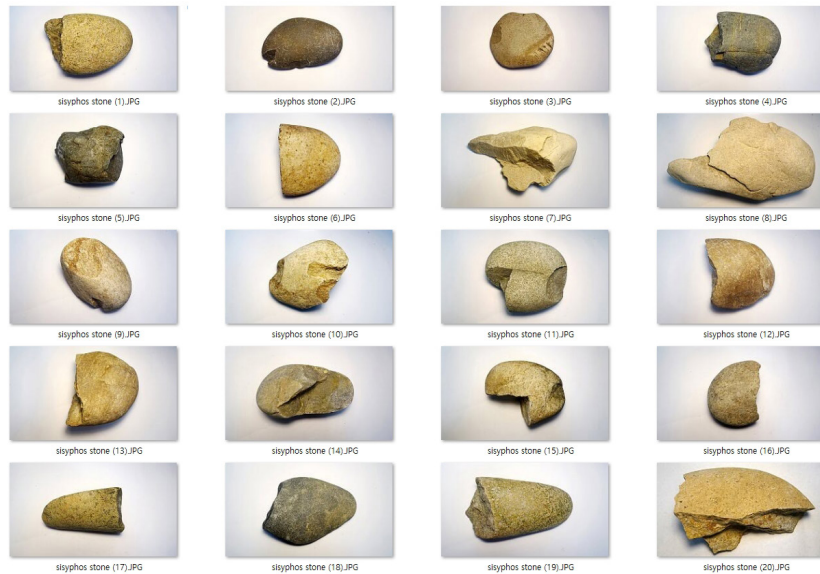
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This perspective is inspired by the remarks of the philosopher Michel Serres on the myth of Sisyphus. Jeffrey Jerome Cohen, *Stone: An Ecology of the Inhuman* (Minneapolis: University of Minnesota Press, 2015).

Dataset-fing: Organizing an Absent Dataset

Let us talk about another dataset when the topography of artificial intelligence and dataset is fluctuating. Unmake Lab's 2020 work *Sisyphus Dataset* shows a dataset that has a slightly different perspective. It consists of round and broken stone images with unusual outlines transferred from a unique natural site¹⁹ transformed by humans.

Unmake Lab defines them as stones of "nature" that are remodeled continuously in the network of extraction and as stones that inversely raise a question about human-centered narratives and desires represented by Sisyphus.²⁰ In other words, it views them as the stone that ceaselessly rolls down in the myth of Sisyphus and organizes Sisyphus Dataset by the images of them.



Unmake Lab, *Sisyphus Dataset* (2020)

The act of organizing the Sisyphus Dataset, which cannot be useful in extractive techniques and perspectives on nature, looks like a gaze of solidarity towards excluded things. It also could be seen as a speculative dataset that critically examines human behavior. Moreover, it seems that it converts the act of creating a dataset into a question that critically infers and reconstructs memories of the past by organizing an "absent dataset" and raises a question if it could be fed back to the future. Thus, this is a process of dataset-ting.²¹

As Pasquinelli pointed out, "the normative force is no longer institutional, but computational."²² When we try to imagine and construct the future under these conditions, the approach must be changed. However, it should not consist of narratives of human subjective use of new technology or human liberation from the technology. It also means that it is necessary to shift to the perspective of "dataset-ting" when constructing futuristic eyes and society. It is not different from what we were talking about the absent things, but about understanding the algorithm of creating a new order and connecting an open circuit to it.

We talked about "dataset-ting" as a process of critically reconstructing the past, and the question of apophenia could be viewed as a poetic power and framework to discover a meaning among wrong correlations while confusing the classified system. This article is an artistic report on a method to talk about things that are still absent even in an emerging order through the concept of "apophenia perspective" and "dataset of absent things." It is also a reminder that various forces must be connected and cooperated, breaking through the perception engraved by "automatic action" and the body's deteriorating familiarity.

What and how are we talking about among things that stealthily coordinate all systems? Is dataset-ting being executed by us? What kind of eyes are we inheriting and bequeathing for the time to come? Moreover, is it setting problems of various participants beyond human being simultaneously? Where does the dataset, which goes beyond the sense synchronized automatically with the emerging technology system, come from? Where does the circuit from which the forces to construct it start? Is art becoming a node in that circuit?

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Yanni Alexander Loukissas, *All Data are Local: Thinking Critically in a Data-driven Society* (Cambridge, MA: MIT Press, 2019).

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Matteo Pasquinelli, "How a Machine Learns and Fails: A Grammar of Error for Artificial Intelligence," *Spheres*, November 20 (2019).