

# Connecting human mind with machine learning: from a platonic approach

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**Abstract** The human mind has the superintelligence to instigate and provoke to do much scientific research and discover mysteries in the ancient world and the modern world. Human thoughts, feelings, and behaviors are the human mind's powers that originate from the human brain. A brain has a network of cells that process information from both the internal and external environment to create our perception of who we are, how the world works, and how we interact with it. It is an endless search and researchers are still investigating how this occurs. The human brain-like models developed to behave like the human (human intelligence), called Artificial Intelligence, and Machine Learning. Human intelligence adapts to new settings by fusing different cognitive processes, whereas Artificial Intelligence is the machines built to mimic human behavior and carry out human-like activities. This research paper aims to find the connection between humans (mind and brain) and Artificial Intelligence (Artificial Deep Neural Networks) from the method of the problem of universals. This has been explained with the platonic concepts for the concept of human intelligence and Artificial Neural Networks for Machine Intelligence, using traditional, mathematical, and real-time scenarios, with the factors like Properties, Uniqueness, Resemblance, and Relations, and the factors used to determine how humans and machines use intelligence in a known and unknown environment. Learning is necessary for intelligent behavior for the act of understanding things and events based on learning. A long-standing philosophical problem relates to induction or learning. Therefore, combining the intelligence of humans and machine learning is beneficial to understand the superiority of creation.

**Keywords:** problem of universals, Universal AI (AIXI), artificial deep neural network, artificial intelligence, machine learning

## 1. Introduction

The contemporary world is moving toward the technologies of the twenty-first century. Artificial intelligence is driving the world (Barnes, 2020). We are all in the realm of virtual intelligence, where we can simulate realism. Technology efficiently connects humans and machines. It is used to solve complex problems significantly and quickly (Barnes, 1984). The impact of technology on human life is enormous, but the question is whether it truly connects people in terms of thinking and exploring new things and ideas. These are all examples of human superintelligence (Bostrom, 2014) and technological superintelligence (Conitzer, 2016). Should the technologically evolved machine cause an "intelligence explosion"? Will it be smarter since it was created to demonstrate human intelligence? This research paper contributes to researchers who are all proving this concept. The concepts were discussed from the ancient to the modern world to understand the superintelligence of AI.

This paper is organized in such a way that it covers the history of philosophy from Plato to Aristotle to medieval world philosophers. Philosophy is the fundamental concept in metaphysics that serves as the foundation for all innovations. The ancient world's discussion of universal problems has been infused with universal AI, which was developed to comprehend universal concepts. The recent scenario was explained in three parts: mathematical pattern, traditional use cases, and the definition of supernatural power in humans. Artificial deep neural networks that mimic the human brain are discussed and supported by research.

The history of philosophy has raised many questions about 'The Problems of Universals'. Such is the problem of universals, which can never be said of as one problem but many. Some questions raised under these conditions have gained much attention and are central questions. A few examples of such questions are whether universals exist, their relation to particulars, and what it means to call something universal (Bahlul, 2009). These are collections of closely related historical variables, with various theoretical frameworks, instead being broadly outlined epistemological, metaphysical, and rational inquiries, that are ultimately interrelated to the possibility of universal recognition of specific objects. Plato himself recognized the problems from his original theory. He raised many difficulties for which he was not able to provide answers that were satisfactory. Aristotle, a student of Plato, rejected his theory and highly criticized it throughout his work. Irrespective of this conflict, which was explicit doctrinal, neo-platonic philosophers and Christians observed a consensus between Plato's and

Aristotle's approach, which served as a base. Both of their approaches were credited, while Aristotle explained how the human mind is acquiring concepts that are universal from things from experience, and Plato explained the establishment of features of things that are modeled based on universal archetypes (Aristotle, 1984). This is considered the initial seed shown for medieval discussions. The concept of the human mind is posterior to the things mentioned in the concept. This was referred to as *universalia post rem*, meaning 'universals after the thing'. *Universalia in re*, which means 'universals in the things', refers to 'universal features of singular things' that are inherent in themselves that answer universal exemplars in the divine mind, which is *universalia ante rem* meaning 'universals before the thing' (Augustine, 1993).

### 1.1. The origin of the Medieval Problems of Universals

Porphyrey raised numerous questions differentiating Plato's theory of forms and its ancient problems, which are both logically and historically related. He explains in his *Isogoge* that one should truly know what genus and differences are. Reflection on these things will provide definitions and matters related to division and demonstration (Berkeley, 1982). Boethius, in his arguments, makes it clear that universality should be common to several particulars. His arguments list down particulars like, in their full extent, not just in part, contemporaneously with not in chronological order, and it ought to be the primary focus of its specifics. His arguments reflect that nothing in real existence can satisfy the abovementioned conditions (Bonaventure, et al., 1883). Plato was seen as a realist because of his belief in the existence of the world of forms, irrespective of how minds interpret forms. He also believed in the reality of the world of forms, compared to the world as it is, which was sensibly perceived as instability in the physical world, which was filled with more variations and flaws, where he considered the world of forms to be a timeless perfection world. This is the theory of universality as given by Plato. He defined the concepts as per his goals in his theory of universals with the same precision and perfection as those used for defining mathematical objects. This was also the reason why he postulated the existence of the unchanging world of forms. Aristotle, the most famous student of Plato, rejected his theory of forms. Aristotle's interest was more in the real world of sense perception. To group natural objects into the kinds of natural objects to which they belong and to organize those categorizations into natural hierarchies was his goal in his theory of universals. Aristotle's vision was different; he did not hold to the idea that pure forms have independent existence. He believed that individual objects have inherent properties. According to him, universality exists as a collection of properties. Both Plato and Aristotle were realists, as they believed in the existence of universals in the world with the independence of any mind perceiving them.

### 1.2. Realism, Conceptualism and Nominalism

Based on the author's view of the existence of universals that speak about universal features of singular or things, medieval debates on realism, conceptualism and nominalism emerged. Realism, which is otherwise known as Platonism, explains the existence of real, objective and independent minds. The proper application of concepts in any possible instance is determined by realism. On the other hand, it is the position that speaks about the entities of mind by which the position is held that comes into existence. The reason for this existence is the shared human experience, which represents a culturally shaped or educated nature. This is dependent on the human mind and the responses obtained. While realism insists on the application of concepts and conceptualism speaks about the out mind, nominalism explains the disposition of human beings with a given word or set of words. This suggests the nonexistence of real entities behind universals.

## 2. Problem of Universals and the convinced solutions

This paper paves the way for re-embracing the philosophy of problem universals intomodern and contemporary technologies and illustrates the potential benefits of modern technology. Deep artificial neural networks exist between humans and machines, including ancient, medieval, modern, and contemporary networks (Aunger,2010).

### 2.1. Properties in the past and present

The phrase "the problem of universals" refers to a collection of various closely related but conceptually distinct philosophical, logical, and epistemological issues that are all related to the question of how universal cognition of unique objects is possible. Is this term referring to anything that all of them have in common? This problem has a logical and historical continuation.

A fundamental parallel between Plato's and Aristotle's approaches, attributed to Aristotle, is a description of how the human mind grows, and Plato explains how the universal characteristics of individuals, by being, are established and modeled after their universal prototypes and draws their universal notions of things from experience (Bontempi, 2019).

The human mind was consequently referred to as how it was seen as coming after specific things. In response to the universal exemplars in the divine intellect, which is also referred to as the super intellect, how are the universal characteristics of single objects known? (Galluzzo, 2015). It is common to categorize medieval authors as realists, conceptualists, or nominalists, based on which of these universal characteristics of unique things, universal concepts, or universal names they regarded as the primary, genuinely existing universals (Grygianiec, 2013). The conceptualists accept universals only or primarily

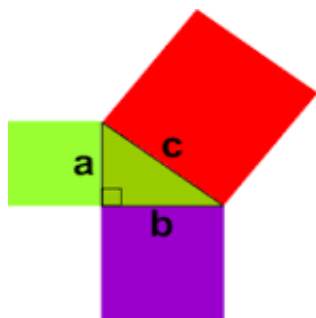
as mental concepts, whereas the nominalists only acknowledge or focus on universal words. Realists believe in the existence of true universals within and/or before things (Jordan, 2005)

First, many medieval thinkers concur that there were universals before objects in the form of divine concepts existent in the divine mind (Klima, 2015). However, they all argued that they were the actual, eternal, mindless beings that Plato had first proposed. Additionally, medieval thinkers concur that certain objects possess *characteristics that the human mind can perceive universally and represent using a universal language*. However, it is quite appropriate to establish a variation between "realism" and "nominalism," particularly when it concerns the divergent perspectives on philosophy and religion in late medieval times (Stanford Encyclopaedia of Philosophy, 2015).

Because it is "superintelligence," artificial intelligence focuses on many different areas but not on philosophical ideas. When artificial intelligence (AI) becomes a larger part of humanity's future, it may use intelligence to identify objects or superintelligence to explore the world without prior knowledge (Bostrom 2014). Every object is different and unique, and some may need labels that are known to us, while others may not. Even within the same category of items, properties can change. The objects are identified based on commonalities. The examples below show how the features of a known object can be used to identify an invisible hidden object.

## 2.2. Resemblance and relationship in Properties

A similar object can be identified using essential variables such as resemblance and relationship. The similarity and connection for identifying one object are described with the help of a geometric example with a universal problem. The Pythagorean theorem is shown in Figure 1.



**Figure 1** Mathematical pattern identification: Pythagoras' theorem.

Source: <https://www.mathsisfun.com/definitions/pythagoras-theorem.html>

In a right-angled triangle, the triangle of the long side is equal to the sum of the triangle of the other two sides.

The following formula is used:  $a^2 + b^2 = c^2$ .

The diagram we could see served as a useful "reminder" of what we should be thinking of when we want to demonstrate that an attribute in this case, that it is a right triangle, must be a quality of the object in our minds because of its nature, that is, a triangle inscribed in squares. The square can also be folded and displayed as a triangle. Only the visible figure and the degree to which it resembles the thing we were picturing support the conclusion. However, it must also be obvious from this point that this figure is supported by the conclusion as well as each additional discernible triangle outlined in a square, the degree to which it can mimic the properties of the ideal object in our minds. Hence, the properties of the triangle are known in advance, and we can easily predict the triangle from the square in this theorem. The triangle represents the unknown environment, and the square represents the known environment.

The Platonic response to the query of what was being demonstrated—that it associated a flawless, ideal triangle that is undetectable to the eye but perceptible to our comprehension—thus enables us to have a potential for immediate justification for the possibility of universal, fundamental knowledge (StanfordEncyclopedia of Philosophy, 2016). Understanding the characteristics of the Form or Idea enables us to be aware of all its particulars or all the objects that replicate it or take part in it. As a result, The Form is both a universal entity and a universal model of all its specifics. Because it is only through understanding this universal entity that we can simultaneously understand all its particulars, we must understand exactly what it is, what it is like, and how it relates to those particulars. However, all these queries assume that such a universal entity exists.

It appears that we do acquire general knowledge about all specifics through this demonstration (Grygianiec, 2013). As a result, problems related to the nature and properties of universals must be addressed; if we understand the universality of universals, knowledge is feasible.

Therefore, we can justify that for differences, species, property, and uncertainty, everything must be understandable to teach about Aristotle's particulars. Reflection on these concepts is helpful for defining definition, division, and demonstration, as our elders said about these concepts.

Everything that is in the required way shared by many things must be present simultaneously and collectively in the substance of these many things, as referred to by medieval. However, these numerous things are numerous since each of them

is distinct from the others in the way that it is. In other words, each thing's act of being is different from one another. The universal has thought to simultaneously contain the essence of each of its unique particulars. Therefore, it would be impossible for all the separate acts of being of the universal entity's numerous particulars to be identical at once (Bonaventure, et al., 1883).

This argument demonstrates the impossibility of anything being both universal and shared by numerous creatures in a way that both shares and serves as their substance (Dingemanse, 2015). In other words, nothing can be both universal and shared by many different beings. A universal exists right now either without a mind summoning it up or simply in one's mind. It must either be a single being or a collection of entities if it is real. However, the author wants to conclude that since it is impossible for it to exist, it can only exist in the mind if it happens either of these two ways. Boethius claimed that the universe inside one's head is a universal understanding of something that exists outside the head. Although our considerations were based on the existence of such knowledge, as is evident, for example, in the case of geometrical knowledge, if that were the case, subsequently, every universal in understanding would have to be a false representation of its objects, making it impossible to have universal knowledge.

### 2.3. *An Act of Understanding: Solution to the Problem*

A false act of comprehension continues to represent an item in a way that is distinct from how it exists. Therefore, if the act of understanding's form of representation differs from the thing's mode of existence, then the act of understanding is false. Even while there are specific things in a specific way, when they are depicted by a universal act of thought, this does not necessarily mean that the representation is inaccurate. However, the objection specifically used this interpretation of the concept. Therefore, the objection is not decisive because the principle can be rejected in this sense (Griffiths, 2020).

The representation is not always the result of the entity's mode of being not matching its mode of representation being false in the specific situation of universal representation. Therefore, if an act of understanding is not in the way it is not, then the act of judgment can be false. Therefore, I can be wrong when I form something in my mind by attributing anything. Based on Pythagoras' theory, when I consider a triangle generally, I rarely envision something that is neither isosceles nor scalene. This is how the mind can distinguish in concept, what cannot be distinguished. This is called abstraction, which is the mental process of separating ideas that cannot be separated (Berkeley, 1982). Using the abstraction process, our mental faculties within us, the active intellect, as defined by Aristotle, can create universal representations of objects by ignoring what makes them special and focusing only on what makes them like one another. According to the long-standing Neo-Platonic tradition, Plato's "original" universals—the universal models that particulars attempt to imitate through their features—found their place in the divine mind. (Klima, 2015).

The same act of understanding is discussed in the recent "Chinese Room Argument" (Searle, 1980). Here, the real understanding of AI is examined. AI translation is used by speakers who do not speak Chinese to communicate with the audience. The same technique was also used to send the reply, this time in the language of the speaker. The message is communicated here. However, do they comprehend languages? Therefore, is the actual understanding happening, whether in the context of AI or philosophical ideas from the past, the issue? If it does not help us comprehend reality, then we are all concentrating on intellect rather than super intellect, which results in exceptional performance and comprehension.

### 2.4. *Divine Mind with Divine Ideas*

By avoiding the inconsistencies resulting from the "naive" Platonic notion, we assume that Platonic Forms are not universal beings that exist universally but rather that their universality is because of a universal mode of perceiving. This conception can still honor the Platonic intuition that the presence of some universal exemplars is the source of their accounting for the essential, universal characteristics of the superficial specifics of the visible world. According to this theory, the archetypes of creation are universal concepts that exist in the divine mind. We could use the foundation of universal knowledge Plato was seeking precisely because we have some understanding of these exemplars themselves. (Stanford Encyclopaedia of Philosophy, (2019) St. Augustine goes on to say: What pious man imbued with true religion, that is, everything that is alive is alive because of God the author, and whatever things they have in them species have a certain nature of their own and that the entirety of preservation and the very framework of things are a result of those who dare to assert that God has created everything in an illogical way if this is established and granted? If this is incorrect, it still stands that everything has a purpose and that a man is not created for the same reason as a horse, which is ludicrous to think (Stanford Encyclopaedia of Philosophy, 2019). As a result, each thing is made for a certain cause. As a result, everything is made for a certain cause. However, if not in the creator's thinking, then where are we to infer that these explanations exist? Because he set up what he set up, he did not take a look outside of himself or do anything that was placed there. That is a sacrilege to believe. Plato refers to these primary reasons for things as "Ideas"; however, if these factors for everything that needs to be made and created are contained in the divine mind and if there cannot be anything in the divine mind that is not eternal and unchangeable, (then) not only are there Ideas, but because they are eternal, they are real and (Always) remain unchanged and unchangeable. In addition, via involvement in them, everything that exists; however, it exists, comes into existence. It determines these reasons using its

intelligence rather than its physical eyes, which are the primary (component) by which it outperforms (everything else). Therefore, whether it is appropriate to refer to them Many are free to refer to things as ideas, shapes, species, or causes, but only a select few are allowed to recognize the truth (Klima, 2000).

The divine mind and God are not connected in the same way as the human mind, specifically as a material to one of its many abilities; however, whatever powers God possesses, He is. Ideas cannot be distinguished from God because they are not actual creatures but rather the archetypes of creatures in God's mind. However, as the paragraph above makes clear, there are various ideas, and there is only one God. The divine ideas are what is understood by the divine mind or its objects. However, the diversity of an act of understanding need not always diversify the act itself. Self-thinking divine nature can be understood as a single act of comprehension (Stinson, 2020). The multiplicity of divine thoughts is explained by awareness of these varied modes of participation. Having many ideas does not, however, include any corresponding plurality of the divine essence because all these various ways of understanding are comprehended in a single act of eternity of cognition, that is, nothing more than the divine being's act and, thus, the divine essence itself.

The Divine Mind is an extremely intelligent entity that will grant you the superhuman ability to think and behave in novel ways without any prior knowledge. Despite being connected to the spiritual, "God," superintelligence is distinct and is given to each person on an individual basis. Despite having a similar brain, humans can perform in a variety of ways owing to the capacity for superintelligence. Therefore, how can artificial intelligence perform or think beyond human intelligence? It is disputed whether deploying AI is a significant issue.

### 2.5. *Illuminationism vs. Abstractionism*

By having a clear grasp of the Divine Ideas themselves and receiving philosophical support, "one that is holy and pure" receives specific supernatural assistance in its actions of understanding.

The Augustinian points to illumination (Schumacher, 2011)

1. I can only learn something from experience if it is discovered in experience. (self-evident)
2. Experience cannot reveal absolute unity. (assumed)
3. As a result, I am unable to learn about total unity through witnessing. (1,2)
4. What I learned is not from my go through; I learned from a source outside of this realm of experiences. (self-evident)
5. I am aware of total togetherness. (assumed)
6. As a result, I learned about complete unity from a source outside of this realm of experience. (3,4,5)

The human mind actively processes the information it receives from experience through the senses, according to the Aristotelian theory (Cooper, 1996). Thus, using the power of the active or agent intellect can create a universal idea that equally represents all potential details lying under that concept from a small number of experiences. Therefore, using these and related arguments as a foundation, it is possible to develop an Aristotelian counterargument that may be learned through active intellect and experience.

1. I have first-hand knowledge of everything that my active mind can abstract an idea from. (self-evident)

2. Nevertheless, because we all perceive each unique thing as being one and separate from the others, my active brain can abstract the idea of unity from experience. (Evident from common experience) (19)

3. As a result, I can abstractly know unity from experience. (1,2)

4. Through abstraction, I learn, and I also learn the item whose notion is being abstracted as well as the restrictions on which it is being abstracted. (self-evident)

As a result, I am familiar with both unity and the constraints that define it. (3,4)

6. However, if I am aware of something and its constraints, and I can imagine it without those constraints, I can imagine its absolute, limitless realization. (self-evident)

7. As a result, using the idea of unity I abstracted from experience, I may imagine the total, limitless fulfillment of oneness. (5,6)

8. As a result, it is not required to possess prior knowledge before any encounter begins. (7)

Notably, this argument does not undermine the notion of illumination in this case.

### 2.6. *Inferences of Approaches to the problem of universals*

Plato and his disciples specified that the whole spirit of perception or reasoning (cognition-human mind) is inherited from the illustrative world, and they acknowledged that immortality pays to certain cognitions, but it may not be true because it destroys the way of knowing when things from the word differ from cognition to cognition (Gasser-Wingate, 2016). Aristotle claimed that the entire spirit of perception or reasoning (cognition) instigates and comes from sense, memory, and experience with active illumination where things are understood as it is.

Hence, the author concludes from the above statements and ideologies that "The human mind is supernatural, that is not the human brain". The philosophers also tried to prove their ideas from their minds, not from their brains, which will find

resemblance, and illuminations. With these above concepts, let us discuss the new generation of technology concepts that implement machine intelligence. How can it be related to human intelligence?

### 3. Modern and contemporary 21<sup>st</sup> generation (artificial deep neural networks)

AI is a field of technology in which human creations are automated in various ways and via various methods. Individuals and information are converted into meaningful and purposeful decisions through analysis and decision-making. Due to the public understanding and deployment of AI, there are still certain obstacles to its adoption (Piatkowski, 2021). Typically, machines are employed to process data that aid humans in their work in a variety of fields. However, AI builds an expert system that can be applied to current challenges (Mike., 2022). Machine learning, deep neural networks, computer vision, and other technologies are used in AI to effectively handle complicated issues.

Machine learning is a widely used technology that trains machines to perform human tasks. It has been divided into three categories: supervised, unsupervised, and reinforcement learning, all of which are used in accordance with the lessons learned. We can refer to it as supervised learning if the computer is programmed with known data, and we expect the same result. Unsupervised learning is the process of teaching a computer to generate predictions from provided data when the data are unknown. Reinforcement learning is the process of teaching computers to perform when they have not previously learned anything. Here, a well-known deep neural network technique, which is frequently employed for complicated, large datasets to anticipate and uncover patterns in unknown data and novel learning environments, is used for real-world problems (Mills, 2018).

Complex problems are solved with deep neural networks. It belongs to the machine learning field. The network employs neurons with various layering methods. It functions much like the human brain, which is activated by various signals. As a result, patterns are recognized, and actions or objects are recognized. Like how the human brain solves problems, the deep neural network handles pattern recognition. The artificial deep neural network is taken into consideration for the discussion because this research also focused on the similarities and differences between human and machine intelligence in the pattern identification of specifics.

The most significant criterion for evaluating people and machines is the cognitive intelligence of cognitive science. A fundamental impasse between artificial intelligence and cognitive science is, at best, only partially acknowledged. This impasse is triggered by presumptions about the nature of representation since conventional methods of representation are inconsistent at the core. Advancements in networks and research have been made on universals using the traditional D3N method, a multilayer cache for data centers and deep neural network modeling. A deep neural network, which is a branch of artificial intelligence, drives the concepts of a universe both in simulation and in particular. (EmineUgurKaynar 2019) stated that a network's driving force is based on its architecture. D3M deep neural network modeling simulates the universe (Giusarma, 2019), and deep neural networks predict the structure of the Universe (S He et al., 2019).

Hence, in the modern world, the concept of universals can certainly be related to artificial intelligence (AI) deep neural concepts. Deadlocks are adapting to artificial intelligence because of their awareness, usage, and attitude toward AI ethics (Nah,2020). However, machine learning, big data, and deep learning are driving the contemporary world (Mohanty, 2007). The modules built using these technologies improve human lifestyles and work styles. However, *how* does artificial deep neural network (AI) technology connect humans? If machines mimic human behavior, then how will they reflect the concept of the problem of universals from ancient, medieval to modern and contemporary philosophy? and is the psychology of the human improved or replaced by a machine? Let us discuss this briefly in the following concepts.

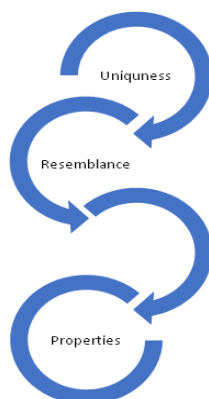
### 4. Connecting the intelligence and super intelligence of humans and machines

This study contributes to the research questions and attempts to determine the relationship between the problem of universals and machine learning. Concerning the article Plato, Aristotle and Machine Learning by Mehmet Alican Noyan, the problem of universality, which is briefly discussed in the introduction, is related to machine learning to find the connection between the data, signal, and noise (Noyan, 2018). Machine learning has explained the problem of universal metaphysics to relate the concepts of how to synchronize the behavior of humans and the behavior of machines for demonstration and decision-making. The correspondence between machine learning and the problem of universals is as follows:

In machine learning, the data are equal to the signal plus noise. However, identifying the noise in the data and the signal that gives the actual prediction are used to compute the data. In the problem of Universals, what we see is the data, and it is computed by adding universals and particular properties.

From the discussion of the convincing solution for the problem of universals, the act of understanding and the divine mind and ideas derived from different philosophers. How the human relates to the machine (Let's Talk Science, 2021). A machine in the contemporary world defines all these problems as an artificial deep neural network, which is used in universal AI. The connection referred to here is "the observation and demonstration derived for their perception to define the particulars and forms" and "the new technology in the perception of understanding the particulars in the same way" (Schmid Huber,2006).

Hence, it is proven that every object has properties, each property represents a feature, and each feature is unique and is used for perception, decision-making, and prediction. The connection between the machine and the human in terms of perception in justifying their particulars is characterized by the aspects of Properties, Unique, Resemblance, and Relationship, as shown in Figure 2.



**Figure 2** Characteristics of particulars in the problem of universals and artificial deep neural networks.

Let us discuss this issue using a classic illustration to clarify the machine and the problem of universal notions. The real problem with food is the aspect of forms. It is a hot dog, a sandwich is a taco or Nero, a burrito and pop tart is a sandwich (Merrill, 2014). is this the game or is this art or viruses alive? Despite the internet belief? Humans have been engaging in frameworks for the research of questions for thousands of years. Aristotle himself knows the alien couldn't be rightly called just an epic or just a tragedy. However, the critics of his time still argue furiously with each other to classify it as one or the other. However, all these admittedly silly arguments are dancing around more abstract questions of metaphysics. analysis of the fundamental nature of the ideas we used to understand the universe, such as what exists, what are objects and what are the properties of that sort of stuff? The answer to these questions has been *described with the traditional example of the problem of the universe*.

As ridiculous as a sound taking a hard line on the hotdog and sandwich question is a move that has heavy metaphysical ramifications related to an old and still sticking issue in philosophy called "the problem of universal", this is what metaphysics calls a particular this specific sandwich. This sandwich has several properties: it smells tasty, it is soft, it is delicious, and it is a sandwich. I can imagine particulars that like certain properties such as a sandwich that is not delicious, it is hard to preimagine a particular with no properties at all or property without a particular object in the body or exhibiting it the way that we talk and think about our world is to treat properties as well particulars share them (Uzay,2022).

If you consider different varieties of sandwiches, there is one thing, 'sandwichness', that appears in these particulars, but if you consider apple and cherry, then the sandwiches do not appear in those that are called nonsandwiches. However, what sort of a thing are sandwiches? Or redness ness? what is the medium used to group these things and call them "sandwiches"? These apples and cherries are called "not sandwiches" (Munster,1964).

By what exactly are certain particulars the same or like or different this question sort of underlines our entire understanding of the universe and everything in it like many things in philosophy there is several answers which only to some very interesting places.

Let us start with Platonism or realism. Platonism believes that the sandwichness and redness, for example, and all of these other properties are relations that exist, the way we talk about them. The particulars seem to like us or similar because there's some essence that they are sharing, so when we say that certain objects are the same color or the same type or have the same relationship, there is something realized in those objects that makes those statements true.

The following recent scenario illustrates machines' particulars, properties, uniqueness, resemblance and relationships. Machines are used to solve complex problems. In real life, in business, and at the workplace, an attempt to advance technology to increase speed and achieve a better outcome can be made if the connections discussed in the sandwich can be applied and tested. According to the example we have discussed in the sandwich, the real-time scenarios of two different products, mobile phones and cars, are represented in Figure 3.

Particulars: Mobile phones, Car

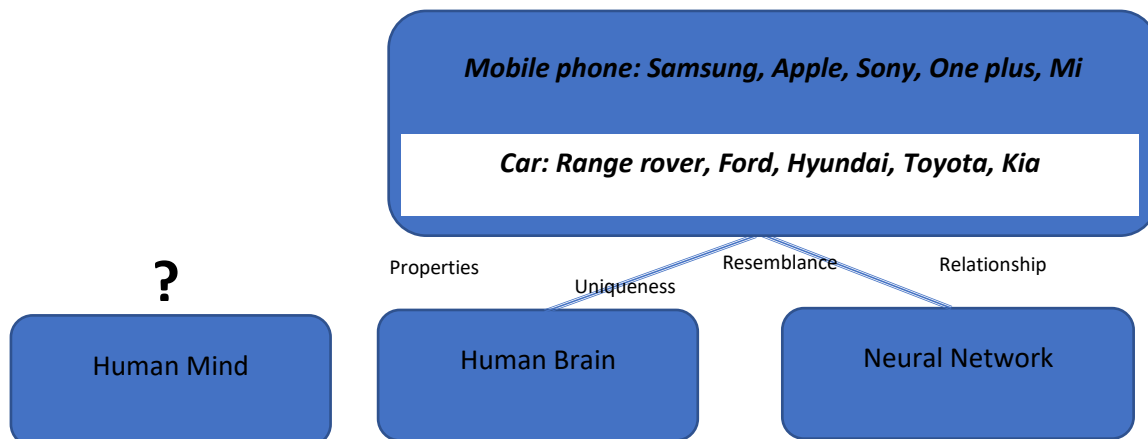
Properties: Mobile phone: keyboard, camera, compact, display and accessibility

Car: Height, width, length, dashboard, and sensors are some of the particular properties of cars.

Mobile phones are unique in terms of brand, configuration, operating system, security, and privacy. For the car, brand, safety, comfort, model, brand, variant, and mileage are the basic uniquenesses of each.

Resemblances among Mobile Phones—Design, Portability, and Applications—and for the Car—Logo—Design—are a few resemblances considered for this explanation.

Relationship of mobile phones: communication, connectivity, and relationships of cars: Commuting, comfort and safety with humans, fuel (diesel and petrol) or electricity, and automatic gear/manual.



**Figure 3** Patterns based on circumstances related to different products.

Hence, the understanding of the problem universe is illustrated with traditional and recent scenarios. However, superintelligent predictions are based on universal problems described further.

All of them are already known, meaning that the information on mobile phones and cars has already been noticed or encountered. "Deep learning may be improved by strengthening the analytical knowledge of it," (Lin, 2017).

Hence, neural networks provide a superior learning paradigm to the brain neuron based on all that they know and do not know. The neural network obtains the data (Unsupervised-unknown Data of Mobile phones and Cars) and conducts training in several layers; it produces a classification result for both mobile phones and cars. It determines whether the categories are similar. Now, the neural network can pick up logic operations. It employs the numbers 1 and 0. There is occasionally a chance that it will malfunction or be affected by the quality of the data. The training algorithm develops the network at a specific point and then pauses in the more complex architecture. When there is no evident best direction, the training strategy is unsuccessful.

Information is not the brain if the human intellect can learn more effectively than a neural network. The human mind is better at learning than a neural network (Holloway, 2022). This illustration demonstrates how the human mind is capable of tasks that a neural network cannot. The pattern is almost instantly apparent when you look at the specifics considered. The neural network, however, is unable to extract the underlying pattern from the vast amount of input (Guzman, 2020). It is simple for a human mind (super intelligence) to determine which properties belong to which group if the properties are enormous. The conclusion that the human mind refers to superintelligence rather than intelligence follows from the fact that the mind cannot be reduced to a neural network and that neural networks cannot be reduced to brain neurons.

*'Human Mind-Super Intelligence, Human brain-Intelligence, Neural networks- Intelligence'*

*Therefore, the human mind is not the human brain, according to neural networks, which is distinctive evidence.*

However, Universal AI (AIXI) is a proven concept in modern physics that is the opposite of metaphysics. According to a universal theory, AIXI makes no assumptions about the environment other than the fact that it is sampled from a calculable distribution and has no modifiable parameters. This assumption is supported by compelling evidence from modern physics for (the relevant components of our real world) (Emerging Technology from the arXiv archive page, 2016). AIXI is an intelligent unbiased module for prediction, games, and reinforcement learning. The main disadvantage of this module is that it is not scalable (Hutter, (2005,2022)). The module developed with recent technology needs updating and a high configuration to improve the outcome.

- i. Neural networks are more capable of learning than the brain, intellectually.
- ii. The human mind is more capable of learning than a neural network.

Hence, the mind is a super intellect that is more capable of learning than the brain; it cannot be the brain.

The mind is not the brain, as artificial deep neural networks may demonstrate. Because artificial deep neural networks are more advanced replicas of the brain, they can perform tasks that the brain is incapable of performing. Therefore, mathematical patterns, fundamental patterns and patterns based on circumstances (recent scenario) are evidence that everything is identified based on the existing data and knowledge, which relates to the human brain and the neural network, which we can say is intelligence. Supernatural power, superintelligence, which makes us think beyond intellect, is demonstrated by the problems of universals, the generations of ancient, medieval, and new modern contemporary technology. An artificial deep neural network (ADNN) cannot perform tasks that the human mind can perform. The mind cannot be limited to what the brain performs because the brain can function like an ADNN.

## 5. Conclusion

The greatest programmatic goals of artificial intelligence, cognitive science and great philosophical ideas are framed by these queries: How can representation be understood? (Capacity of intellect when they see the object or things). How do we comprehend intelligence? (the understanding ability of the human mind). How can structures with true representations and true mindsets be created? (Origin of the object and the man-made objects), Answers to all these queries are presented in the problem of universality in ancient, medieval, and modern artificial deep neural network technology. The intellect of the human and the machine intellect play a vital role in an act of understanding known and unknown things in the environment. This has been explained in terms of their properties, resemblance, uniqueness and relationships. The universal AI discussed in this paper involves establishing a link between the human intellect and the human brain. However, AI cannot think beyond the intellect of humans, whereas humans can think and understand from a super intellectual perspective. Mathematical and traditional examples and a more current scenario are used to determine the intelligence and super intelligence of both humans and machines. We can exist in virtual intelligence, where we can obtain the same object or feel that something exists with prior perceptions and details, but we are unable to exhibit original thought with cutting-edge technology that aims to replace the human-super intellect that comes from the human mind. Therefore, the human mind is the human superintellect that produces creativity and is superior to the human brain (intellect), which can be replaced or mimicked by a machine called artificial deep neural networks (ADNNs). Hence, the human mind is not like the human brain, and the machines developed with artificial deep neural networks can behave like the human brain but not like the human mind, where the origin of the superintellect starts with new thinking and new innovations. This intellect and superintellect can be further discussed with respect to the different applications of AI and can lead to a better improvement in the future technology that connects humans.

### Ethical considerations

Not applicable.

### Conflict of Interest

The authors declare no conflicts of interest.

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### References

- Artz, J. (1998). Information modeling and the problem of universals: A preliminary analysis of metaphysical assumptions. In *Proceedings of the Americas Conference on Information Systems (AMCIS) - AMCIS 1998* (p. 272).
- Augustine. (1993). *On the free choice of the will* (T. Williams, Trans.). Indianapolis, IN: Hackett.
- Artz, J. M. (2020). Information modeling and the problem of universals. In *Information technology reference: In-depth information* (Chapter 15). Retrieved from <http://what-when-how.com/Tutorial/topic-1157i512aer/Distributed-Artificial-Intelligence-Agent-Technology-and-Collaborative-Applications-298.html>
- Aubinet, S. (2022). The problem of universals in cross-cultural studies: Insights from Sámi animal melodies (yoik). *Psychology of Music*, 50(3). <https://doi.org/10.1177/03057356211024346>
- Augner, R. (2010). What's special about human technology. *Cambridge Journal of Economics*, 1. <https://doi.org/10.1093/cje/bep018>
- Bahlul, R. (2009). Avicenna and the problem of universals. *Philosophy & Theology*, 21(1-2).
- Barnes, J. (Ed.). (1984). *The complete works of Aristotle*. Princeton, NJ: Princeton University Press.
- Berkeley, G. (1982). *A treatise concerning the principles of human knowledge*. Indianapolis, IN: Hackett.
- Bickard, M. H., & Terveen, L. (1995). *Foundational issues in artificial intelligence and cognitive science: Impasse and solution*. Elsevier Science Publishers.
- Bonaventure, et al. (1883). *De humanae cognitionis ratione: Anecdotaquaedam Seraphici Doctoris Sancti Bonaventurae et nunnulorum eius discipulorum*. Ad Claras Aquas (Quaracchi): St. Bonaventure.
- Bontempi, G. (2019). Realism, machine learning and the problem of universals. Retrieved from <https://datascience741.wordpress.com/2019/01/17/realism-machine-learning-and-the-problem-of-universals/> (accessed October 10, 2022).
- Bostrom, N. (2014). *Superintelligence: Paths, dangers, strategies*. Oxford: Oxford University Press.
- Bryson, J. J. (2020). The past decade and future of AI's impact on society. In *Towards a new enlightenment? A transcendent decade*. Retrieved from <https://www.bbvaopenmind.com/en/articles/the-past-decade-and-future-of-ai-impact-on-society/> (accessed September 27, 2022).
- Conitzer, V. (2016). Artificial intelligence: Where's the philosophical scrutiny? *Prospect*.
- Cooper, J. M. (1996). An Aristotelian theory. In *Essays on Aristotle's rhetoric* (Vol. 6, p. 238).
- Dingemans, M., Roberts, S. G., & Baranova, J. (2015). Universal principles in the repair of communication problems. *PLoS ONE*, 10(1), 1-15. <https://doi.org/10.1371/journal.pone.0136100>
- Emerging Technology from the arXiv archive page. (2016). The extraordinary link between deep neural networks and the nature of the universe. Retrieved from <https://www.technologyreview.com/2016/09/09/157625/the-extraordinary-link-between-deep-neural-networks-and-the-nature-of-the-universe/#:~:text=Artificial%20intelligence->



- ,The%20Extraordinary%20Link%20Between%20Deep%20Neural%20Networks%20and%20the%20Nature,in%20the%20laws%20of%20physics (accessed October 10, 2022).
- Galluzzo, G., & Loux, M. J. (2015). *The problem of universals in contemporary philosophy*. Cambridge: Cambridge University Press.
- Gasser-Wingate, M. (2016). Aristotle on induction and first principles. *Philosophers*, 16.
- Giusarma, E., Hurtado, M. R., Villaescusa-Navarro, F., He, S., Ho, S., & Hahn, C. (2019). Learning neutrino effects in cosmology with convolutional neural networks. *arXiv preprint arXiv:1910.04255*.
- Griffiths, T. L. (2020). Understanding human intelligence through human limitations. *Trends in Cognitive Sciences*. <https://doi.org/10.48550/arXiv.2009.14050> (in press).
- Grygianiec, M. (2013). Two approaches to the problems of universals by J. M. Bochenski. *Stud East Eur Thought*, 65(1), 27-42. <https://doi.org/10.1007/s11212-013-9176-8>
- Guzman, A. L., & Lewis, S. C. (2020). Artificial intelligence and communication: A human machine communication research agenda. *New Media & Society*, 22(1), 70-86. <https://doi.org/10.1177/1461444819858691>
- He, S., Li, Y., Feng, Y., Ho, S., Ravanbakhsh, S., Chen, W., & Póczyos, B. (2019). Learning to predict the cosmological structure formation. *Proceedings of the National Academy of Sciences*, 116(28), 13825-13832.
- Holloway, E. (2022). How AI neural networks show that the mind is not the brain. *Mind Matters News*. Retrieved from <https://mindmatters.ai/2022/08/how-ai-neural-networks-show-that-the-mind-is-not-the> (accessed October 3, 2022)
- Hutter. (2005). AIxIjs. Retrieved from <http://www.hutter1.net/aixijs/index.html>
- Jordan, W. (2005). *Ancient concepts of philosophy*. Taylor & Francis e-Library.
- Kaynar, E. U., Abdi, M., Hajkazemi, M. H., Turk, A., Sambasivan, R. R., Cohen, D., ... & Krieger, O. (2019, December). D3N: A multi-layer cache for the rest of us. In *2019 IEEE International Conference on Big Data (Big Data)* (pp. 327-338). IEEE.
- Klima, G. (2000). The medieval problem of universals.
- Klima, G. (2015). The medieval problem of universals. *Stanford Encyclopedia of Philosophy*. Retrieved from <https://plato.stanford.edu/entries/universals-medieval> (accessed September 15, 2022)
- Let's Talk Science. (2021). AI and human-computer communication. Retrieved from <https://letstalkscience.ca/educational-resources/backgrounders/ai-and-human-computer-communication>
- Lin, H. W., Tegmark, M., & Rolnick, D. (2017). Why does deep and cheap learning work so well? *Journal of Statistical Physics*, 168(6), 1223-1247.
- Merrill, M. (2014). Is this a sandwich? Teaching the Platonic dialogues through sandwiches. Retrieved from <https://kmikeym.medium.com/is-this-a-sandwich-50b1317eb3f5> (accessed October 3, 2022).
- Mike, T. (2022). The future of AI: How artificial intelligence will change the world. Retrieved from <https://builtin.com/artificial-intelligence/artificial-intelligence-future> (accessed September 27, 2022).
- Mills, T. (2018). Virtual intelligence vs. artificial intelligence: What's the difference? Retrieved from <https://www.forbes.com/sites/forbestechcouncil/2018/03/27/virtual-intelligence-vs-artificial-intelligence-whats-the-difference/?sh=6c659b681cc0> (accessed September 30, 2022).
- Mohanty, J. N. (2007). Philosophy in the 21st century. *eSamskriti Cultural Spirituality Travel*. Retrieved from <https://www.esamskriti.com/e/Spirituality/Philosophy/Philosophy-in-the-21st-century-1.aspx> (accessed October 7, 2022).
- Munster Jr, J. H., & Smith, J. C. (1964). Savants, sandwiches, and space suits: Universities engaged in research and development must find ways to protect their intellectual "property." *Science*, 145(3638), 1276-1281.
- Nah, S., McNealy, J., Kim, J. H., & Joo, J. (2020). Communicating artificial intelligence (AI): Theory, research, and practice. *Communication Studies*, 71(3), 369-372. <https://doi.org/10.1080/10510974.2020.1788909>
- Noyan, M. A. (2018). Plato, Aristotle and machine learning. *Towards Data Science*. Retrieved from <https://towardsdatascience.com/plato-aristotle-and-machine-learning-521c3252cbd1> (accessed October 3, 2022).
- Piarkowski, D., Park, S., Wang, A. Y., Wang, D., Muller, M., & Portnoy, F. (2021). How AI developers overcome communication challenges in a multidisciplinary team: A case study. *Proceedings of the ACM on Human-Computer Interaction*, 5(CSCW1), 1-25. <https://doi.org/10.1145/3449205>
- Reyes, K. (2022). What is deep learning and how does it work. Retrieved from <https://www.simplilearn.com/tutorials/deep-learning-tutorial/what-is-deep-learning> (accessed September 30, 2022).
- Scherer, J. (2015). A bro and a philosopher debate the true meaning of a sandwich. Retrieved from <https://firstwefeast.com/eat/2015/04/philosophy-of-meat-bread>
- Schmidhuber, J. (2006). Celebrating 75 years of AI - History and outlook: The next 25 years. In *Proceedings of the 50th Anniversary Summit of Artificial Intelligence* at Monte Verita, Ascona, Switzerland.
- Schumacher, L. (2011). *Divine illumination: The history and future of Augustine's theory of knowledge*. John Wiley & Sons.
- Searle, J. (1980). Minds, brains, and programs. *Behavioral and Brain Sciences*, 3(3), 417-457.
- Stanford Encyclopedia of Philosophy. (2015). Nominalism in metaphysics. Retrieved from <https://plato.stanford.edu/entries/nominalism-metaphysics> (accessed October 3, 2022).
- Stanford Encyclopedia of Philosophy. (2016). Platonism in metaphysics. Retrieved from <https://plato.stanford.edu/entries/platonism> (accessed October 3, 2022).
- Stanford Encyclopedia of Philosophy. (2019). Saint Augustine. Retrieved from <https://plato.stanford.edu/entries/augustine> (accessed September 3, 2019).
- Stinson, C. (2020). From implausible artificial neurons to idealized cognitive models: Rebooting philosophy of artificial intelligence. *Philosophy of Science*. <https://doi.org/10.1086/709730> (preprint).
- Uzay, Ç. A., & Geren, N. E. (2022). Sandwich composites, fabrication and characterization.