Journal of American Science

Websites:
http://www.jofamericanscience.org
http://www.sciencepub.net

Emails:
editor@sciencepub.net
sciencepub@gmail.com

MARSLAND PRESS
Multidisciplinary Academic Journal Publisher

Unlabeled cognitive model based on circular logarithmic graph algorithm

Wang Yiping [1], Li Xiaojian [2]

[1] Researcher, Senior Engineer, Quzhou Association of Senior Scientists and Technologists, Zhejiang Province; has long been engaged in mathematical foundation and rotation Mechanical engineering research. Published more than 20 papers at home and abroad, and obtained 8 invention patents including "Aerospace Inner Cooled Negative Pressure Scroll Engine". Author email: wyp3025419@163.com.

[2] Professor, School of Electrical and Control Engineering, Beijing North China University of Technology, Researcher, Institute of Automation. Communication Author email lxj1166@qq.com

Abstract: An unlabeled cognition model based on the circle logarithm graph algorithm is proposed, which is a machine cognition model with data analysis and reasoning functions, which integrates the **C**entral zero point-**R**elative symmetric probability-**R**egularized combination topology-**T**ime series. To establish a cluster set of fully enclosed circles, the non-repetitive combination of the basic elements of the "triad" is used as the characteristic module, which is mapped to the logarithm of the unlabeled circle, which is expanded in the [0 to 1] five-dimensional vortex structure. It integrates knowledge-data-algorithm-computing power, and integrates the characteristics of unitity (quantization), reciprocity, complementarity, interpretability, robustness, and time series into a simple mathematical formula called concentric circles. With complete, generalization, security, stability, privacy, high parallelism, high precision, and powerful analysis and cognition of sharing, it has become a new generation of clustering neural network **(CRRT-AI)**.
[Wang Yiping, Li Xiaojian. **Unlabeled cognitive model based on circular logarithmic graph algorithm.** *J Am Sci* 2020;16(11):54-82]. ISSN 1545-1003 (print); ISSN 2375-7264 (online). http://www.jofamericanscience.org. 6. doi:10.7537/marsjas161120.06.

Key words: Artificial intelligence; Central Zero-Probability-Topology-Time series; Characteristic mode; Circular logarithm map algorithm

1 Introduction

Artificial Intelligence (AI) is the ability of a computer program or machines controlled by digital computers to simulate, extend and expand human intelligence, perceive the environment, acquire knowledge and use knowledge to obtain the best results in theories, methods, technologies and applications System-"Artificial Intelligence Standardization White Paper" (2018). It is an interdisciplinary subject that integrates psychology, physiology, philosophy, mathematics, cybernetics, information, science, and computer. Academician Zhang Bo of the Chinese Academy of Sciences called the first generation of AI symbolism. The second generation of AI is connectionism [1]. The third generation of AI is unsupervised learning without specific content calculations.

Geo LeCun, winner of the 2016 ACM Turing Award, stated that the challenge in the next few years is to let machines learn to learn from raw, unlabeled big data, that is, unsupervised learning, and proposed that unsupervised learning is the next stop of artificial intelligence. Geoffrey E. Hinton, winner of the 2020 Turing Award, said: Humans cannot completely rely on supervised learning methods to complete all neuron training. Artificial intelligence is widely used in:

(1) Robotic Process Automalion OCR;

(2) Optical Characler Recognilion OCR;

(3) Machine Learning/Big Data Analysis;

(4) Natural Language Generation (Natural Language);

(5) Smart Workflow;

(6) Cognitive Agent. It is found that the current artificial intelligence mathematical model is often affected by unexplained or undiscovered random errors and systematic errors, which are concentrated in the fusion of large-scale (discrete) knowledge bases and cognitive-based logic (entanglement) reasoning. If there is a difference, how to reasonably eliminate and merge it? It has become a new generation of bottleneck problems facing the development of artificial intelligence.

The work of the team of academician Zhang Bo of Tsinghua University: represented by the integration of the "three spaces" of classifiers, perceptrons, and discriminators, and unsupervised learning, moving towards the "third-generation artificial intelligence".

The work description of the circle logarithm map algorithm, which integrates the "three spaces" of the classifier, the perceptron, and the discriminator, and transforms it into "the relative symmetry of the central zero point, unit probability, combination topology, and shared time series space" as a whole Yes, carry out irrelevant mathematical model-unsupervised learning, represented by infinite analysis and cognition between {0 to 1}, and enter the "third generation of artificial intelligence".

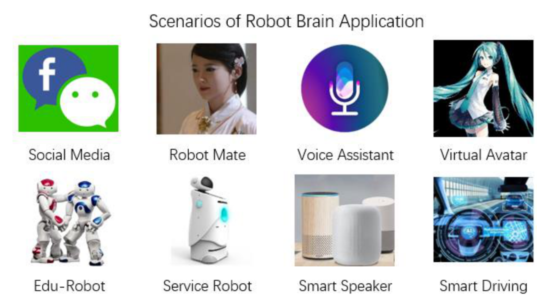


Figure 1.1 Application diagram of modern artificial intelligence （Quoted from network pictures）

The discussion of "stepping towards" and "stepping into" reflects the different depth and work progress of the "third-generation artificial intelligence". In other words, the current pattern recognition cognitive analysis vector method classifier perceptron, gradient descent method, BP method, threshold logic method, Hebb learning rate, DNN, etc. constitute ANN for transformation and reorganization. It also includes better loss functions, crossover high loss functions, regularization methods to prevent overfitting, loss function product neural networks (CNN), recurrent neural networks (RNN), long short memory neural networks (LSTN), Sinton's The deep belief network (DBN), as well as the double-space, single-space, and triple-space of various neural networks, can be expanded and integrated into a simple one through the "three unitary {0 to 1} norm invariance" of logarithms. The description of "concentric space".

The specific idea is based on the concept of clustering set global and full circle closed, each element is not repeated combination set as the feature model, mapped to the unlabeled quadratic circle logarithm, and potentially infinite data analysis is performed between [0 to 1] And cognition. Combine knowledge, data, algorithms, computing power, and their common reciprocity, complementarity, unitity, probability, topology, relative symmetry of zero points, interpretability, robustness, high parallelism, time series, etc. Integrate into a simple formula description. It also reflects completeness, generalization, high precision, security, stability, privacy, sharing, powerful analysis and cognitive functions. Called the third generation of AI.

2. The basic concept of circular logarithmic graph algorithm

2.1 Bayes' theorem and logarithm of circle

Bayes' theorem is the basis of pattern recognition algorithms,

(2.1.1) Prod (A/B)= Prod (A) Prod (BIA) / Prod (B);

Due to the combination of the discrete asymmetry and entangled cognition in the knowledge base of artificial intelligence, Bayes' theorem encounters difficulties in label-free applications and is limited. The defects of Bayes' theorem are shown in：

(1), The inability to clearly define the concept of the probability center of the cluster set, especially the incomplete description of the multidimensional space "loss function". The reason is that the concept of statistics has not been clarified.

(2), The isomorphic variability of topological combination cannot be clearly defined, and its tedious iteration makes the program complicated and limited Expansion of generalization.

(3), It is impossible to clearly define the unity of probability in pattern recognition, which is incapable of high-parallel multi-media coordination.

Currently, people propose that the new generation of artificial intelligence is the establishment of "unsupervised learning". Here, unsupervised learning-unlabeled cognition involves the transformation of existing pattern recognition. It still starts with the expansion and transformation of Bayes' theorem.

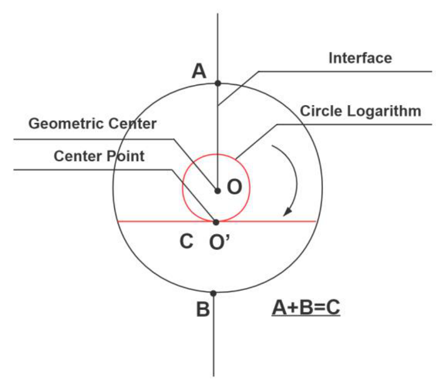


Figure 2.1 Bayes' theorem and circle logarithm

For example, a circular plate, passing through the center (o) of the circular plate, is suspended on the vertical line of point A in the air, and different small weights are hung around the geometric center (O) of the circular plate (the total mass is less than the tensile strength of the suspension line, the circular The board will not break). Move the center point to (O') and call the center balance zero point. With small heavy objects around, you can see that the circular plate always rotates and tilts to one side. Reflects the unevenness of the periodic weight distribution. The equilibrium point (OA)=(O'A) is called (orbit), and (OO')=(OO') is the weight (distance).

If you want to maintain the horizontal symmetrical position of the circular plate, you must move the geometric center point (O) of the circular plate on the vertical line to point C (O\`), taking (OC) as the radius, and forming the radius (OC)=(OO') as $(\eta)\sim(1-\eta^2)$ is called circle logarithmic curve function. It is called center zero balance, which has the function of converting asymmetry into relative symmetry. As shown in Figure 2.2.

The suspension line is called the interface, and the two sides of the non-horizontal circular plate are symmetrical, which has become the mathematical basis of the current pattern recognition symmetry calculation. It is difficult to deal with asymmetry, and interface defects are exposed. Obviously, the interface line set and the center zero set are two different mathematical concepts.

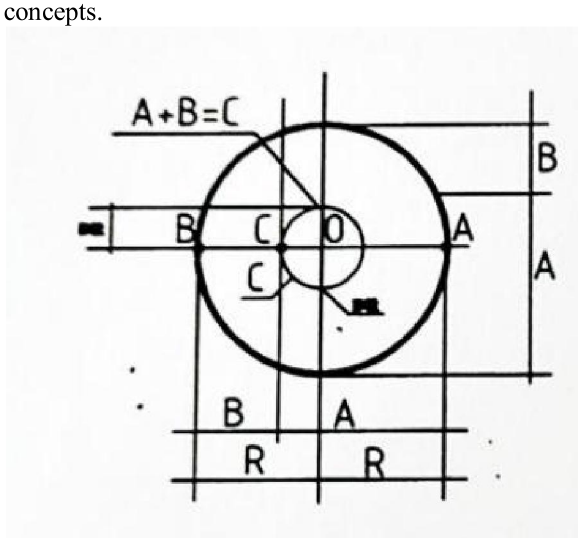


Figure 2.2 Center zero balance

The orbit of the circular plate (OC radius or O\`) is called the center zero point, which has relative symmetry, $\sum_{(i=+S)}(+\eta)=\sum_{(i=-S)}(-\eta)$, the rotatability is recognized and classified, Keep the unit probability invariance and isomorphism topology orbit invariance. It is called unlabeled-circle logarithm.

(2.1.2) $(1-\eta^2)$=Prod (a/b) / Prod (bIa) = Prod (a) / Prod (b);

(2.1.3) $(1-\eta^2)=(1-\eta^2)^{+1}\cdot(1-\eta^2)^{-1}=(0 \text{ to } 1)$;

(2.1.4) $(1-\eta^2)=(1-\eta_\omega^2)\cdot(1-\eta_H^2)\cdot(1-\eta_T^2)=(0 \text{ to } 1)$;

Among them： Prod (A/B)/Prod (BIA)=$(1-\eta^2)$; Prod (A) =A; Prod (B)=B;

The formulas (2.1.2) and (2.1.3) become the expansion and transformation model of Bayes' theorem, (2.1.4) is called "three unitary gauge invariance, and it is obtained by the concept of cluster set center $(1-\eta_\omega^2)$= (0 to 1) is defined as a loss function, dealing with asymmetry is relative symmetry; $(1-\eta_H^2)$=(0 or 1) is defined as a probability function to ensure that the various combinations of the multi-cluster set have unity and perform power functions -Integer expansion of time series; $(1-\eta_T^2)$=(0 or 1) is defined as a topological function to ensure that the various combinations of multi-cluster sets have isomorphic consistency, which can be normalized to convert nonlinearities into linear combinations.

Problem: Overcoming the shortcomings of traditional Bayes' theorem-pattern recognition, pattern recognition is extended to practical unsupervised learning, which makes computer programs simple, functional and adaptable to applications in various scientific fields.

2.2 Basic definition of cluster center analysis

The concept of clustering center is a calculation concept based on the geometric center point of the homeomorphic circle, by moving the center zero point to coincide with the geometric center point, forming concentric circles. The plane data processing of the interface is processed as the center zero point data processing, which is further expanded to the recognition-analysis-reasoning method of the data in the five-dimensional vortex space of the three-dimensional cube.

Definition 2.2.1 the clustering set: any finite element (Z±S) set of infinite level is the unit body of the data object. The unit body is divided into several regional logic units $\{Q,M,N,q\}^{K(Z\pm S)/t}$, which realize their own functions respectively.

The mathematical feature is the data collection, processing, classification, and movement of various objects of different types in a cluster. The logical structure is to classify the thoughts of the entire system, arithmetically group them in the "center zero point", and then move the center zero point to coincide with the geometric center (the average value of the function); the process maintains the internal data characteristics of the unit to generate the logarithm of the circle, respectively There are symmetrical zero-point circle logarithm, probability circle logarithm, topological circle logarithm, collectively called "three unitary gauge invariance circle logarithms".

Definition 2.2.2 the cluster analysis (cluster analysis) is a mathematical model formed by the combination of mathematical addition and multiplication in a cluster set. $\sum_{(i=S}\prod_{(i=q)}\{x_1x_2\cdots x_p\cdots\}^{K(Z\pm S)/t}$, K represents the nature of clustering (K=+1,±1±0,-1).

Define 2.2.3 the sub-items of the cluster set, and classify and combin$^{K(q}$e the element data of the cluster set into different classes or groups (clusters), which are called mathematical combination sub-items $\prod_{(i=q)}\{x_1x_2\cdots x_q\}^{K(Z\pm S\pm q)/t}$

Define 2.2.4 the clustering arbitrary finite feature mode (sub-item) and coefficients, the regularization coefficient $(1/C_{((i=p))})$ K is the number of combinations, and the coefficient is divided by the sub-items to form the feature mode (positive, Mean value of medium and negative power functions).

(2.2.1) $\{R_0\}^{K(q)/t}=\{\sum_{(i=S)}(1/C_{((i=p))})^K\prod_{(i=q)}(x_1x_2\cdots x_q)]\}^{K(q)/t}$;

(2.2.2) $\{R_0\}^{K(1)/t}=\{^{K(q)}\sqrt{\prod_{(i=q)}(x_1x_2\cdots x_q)}]\}^{K(1)/t}$;

Define 2.2.5 the infinite point feature mode of the cluster set (the average value of the positive, medium, and negative power functions), which has a combined form, which are called element dimension (S), area (Q), parallel multimedia state (M), Level, calculus (N), number of element combinations (q), form a unified time series:

(2.2.3) $\{R_0\}^{K(Z/t)}=\sum_{(i=S)}(1/C_{(i=p)})^K\prod_{(i=M)}\{x_1x_2\cdots x_p\cdots\}^{K(Z\pm S\pm N\pm M)/t}$。

(2.2.4) $\{R_0\}^{K(Z/t)}=\sum_{(i=S)}\{R_0\}^{K(Z\pm S\pm N\pm M)/t}$。

(2.2.5) $\{R_0\}^{K(Z/t)}=R_0^{K(Z\pm S\pm N\pm M\pm 0)/t}+R_0^{K(Z\pm S\pm N\pm M\pm 0)/t}+\cdots+R_0^{K(Z\pm S\pm N\pm M\pm q)/t}$

Define 2.2.6 the representative (linear) sub-items of the cluster set as the unit function, which is called the sample module.

There are: the first sample modulus, the multiplication combination of all elements of the clustering function

(2.2.6) $\{R_0\}^{K(1)/t}=\{(^{K(S\pm M)/t}\sqrt{\prod_{(i=S\pm M)}(x_1x_2\cdots xq\cdots)}\}^K=\{\sqrt{\mathbf{X}}\}^{K(0)/t}$;

The second sample modulus, the continuous addition combination of all elements of the clustering function

(2.2.7) $\{R_0\}^{K(1)/t}=\{(1/S)^K(x_1^K+x_2^K\ldots x_q^K\ldots)\}^{K(1)/t}$;

Define 2.2.7 the integerity of the power function of the cluster set. The clustering function divides the sample modulus to get the integer time series expansion of the power function.

(2.2.8) $K(Z/t)=\{R_0\}^{K(Z/t)}/\{R_0\}^{K(1)/t}$

$=\sum_{(i=S)}\prod_{(i=p)}\{x_1x_2\cdots x_p\cdots\}^{K(Z\pm S\pm M\pm N\pm p)/t}/\{(^{K(S\pm M)/t}\sqrt{\prod_{(i=S\pm M)}(x_1x_2\cdots xq\cdots)}\}^{K(1)/t}$

$=\sum_{(i=S)}(1/C_{(i=p)})^K\prod_{(i=p)}\{x_1x_2\cdots x_p\cdots\}^{K(Z\pm S\pm M\pm N\pm p)/t}/\{(1/S)^K(x_1^K+x_2^K\cdots x_q^K\cdots)\}^{K(1)/t}$

$=K(Z\pm S\pm Q\pm M\pm N\pm p)/t$;

Define 2.2.8the logarithm of the cluster set probability circle: each element of the clustering function divided by the entire clustering function

(2.2.9) $(1-\eta_H^2)^{K(Z/t)}=\sum_{(i=S)}[\{x_{ji}\}/\{x_1+x_2+\cdots+x_p\}]^{K(Z/t)}=\{0\text{ 或 }1\}^{K(Z/t)}$;

Define2.2.9 the logarithm of the probability circle of the cluster set center: each element of the cluster function is divided by the average value of the entire cluster function to obtain the relative symmetry.

(2.2.10) $(1-\eta_H^2)^{K(Z/t)}=\sum_{(i=S)}[\prod_{(i=p)}\{x_{ji}\}/\prod_{(i=q)}(1/C_{(i=p)})^K\{x_1+x_2+\cdots+x_p\}]^{K(Z/t)}$

$=\sum_{(i=S)}[\prod_{(i=p)}\{x_{ji}\}/(1/C_{(i=p)})^K\prod_{(i=q)}(1/C_{(i=p)})^K\{x_1+x_2+\cdots+x_p\}]^{K(Z/t)}$

$=\sum_{(i=S)}[\{x_{ji}\}/(1/C_{(i=p)})^K\{x_1+x_2+\cdots+x_p\}]^{K(Z/t)}$

$=(1-\eta_H^2)^{+(Z/t)}+(1-\eta_H^2)^{-(Z/t)}=\{0\text{ or}1\}^{K(Z/t)}$;

(2.2.11) $\sum_{(i=+S)}(+\eta_H)^{+(Z/t)}+\sum_{(i=-S)}(-\eta_H)^{-(Z/t)}=\{0\text{ or }1\}^{K(Z/t)}$;

Define2.2.10 the reciprocity of the circle logarithm of the cluster set

(2.2.12) $(1-\eta^2)^{K(Z/t)}=(1-\eta^2)^{+(Z/t)}+(1-\eta^2)^{0(Z/t)}+(1-\eta^2)^{-(Z/t)}=\{1\}^{K(Z/t)}$;

$(1-\eta^2)^{K(Z/t)}=(1-\eta^2)^{+(Z/t)}+(1-\eta^2)^{-(Z/t)}=\{1\}^{K(Z/t)}$;

$(1-\eta^2)^{K(Z/t)}=(1-\eta^2)^{+(Z/t)}\bullet(1-\eta^2)^{-(Z/t)}=\{1\}^{K(Z/t)}$;

Define 2.2.11 the topological circle logarithm of the clustering set: the average value of each element of the clustering function divided by the average value of the entire clustering function

(2.2.13) $(1-\eta^2)^{K(Z/t)}=\sum_{(i=S)}[(1/C_{(S\pm N\pm q)})^k\prod_{(i=q)}\{x_{ji}\}/(1/C_{(S\pm N)})^k\prod_{(i=q)}\{x_1x_2\cdots x_p\cdots\}]^K=\{0\text{ to }1\}^{K(Z/t)}$;

Define 2.2.12 the center zero point of the circle logarithm of the clustering set: the balance, transformation, limit, and relative symmetry point of the properties of the combination set of each element of the clustering function,

(2.2.14) $(1-\eta^2)^{k(Z/t)}=(1-\eta^2)^{+(Z/t)}+(1-\eta^2)^{-(Z/t)}=\{0,(1/2),1\}^{k(Z/t)}$;

Define 2.1.13 the expansion of the circle logarithmic equation of the cluster set

(2.2.15) $(1-\eta^2)^{K(Z/t)}=(1-\eta^2)^{K(S\pm M\pm N\pm 0)/t}+(1-\eta^2)^{K(S\pm M\pm N\pm 1)/t}+\cdots+(1-\eta^2)^{K(S\pm M\pm N\pm q)/t}=\{0 \text{ to } 1\}$;

In the formula: power function-time series represents the combination of cluster analysis, which can be increased or decreased according to the level (factor). When the sequence is combined with the geometric space, it becomes a five-dimensional vortex structure with a continuous frame of rotation and a precession axis.

2.3. Different collection concepts of clustering interface and center zero

Cluster analysis includes: processing the relationship between the center point (geometric center point, function average), center zero point, distance (weight), and interval (track).

(1) For mechanics: the center of mass of each galaxy of the celestial body coincides with the moment balance point; $[(\eta)-(1-\eta^2)]^{K(Z)/t}=0$;

(2) For geometrical space: center ellipse, eccentric circle, eccentric ellipse (ovate) balance center, can convert the homeomorphic topology center circle (concentric circle) symmetry center zero point coincides with the center of gravity balance point; $[(\eta)-(1-\eta^2)]]^{K(Z)/t}=0$;

(3) For group theory: the central collection point of cluster analysis coincides with the group balance point; $[(\eta)-(1-\eta^2)]^{K(Z)/t}=0$;

(4) For arithmetic: the zero point of hundreds of millions of triples, such as the symmetry point of the Fibonacci sequence: 5+8=13; 8+13=21;...; A+B=C central set point and etc. The formula balance points coincide; $[(\eta)-(1-\eta^2)]^{K(Z/t}=\{0 \text{ or } 1\}^{K(Z)/t}$; among them, the vector is converted to linear by "rotation".

(5) For algebra: any three elements of infinite (Z) clustering element combination (S=3), until any dimensional differential (-N) integral (+N), (±N=0,1,2⋯) Is the limit point of the partial calculus polynomial. "Zero-order $\{R_0\}^{K(Z\pm S\pm 0)}$, first-order $\{R_0\}^{K(Z\pm S\pm 1)}$, second-order $\{R_0\}^{K(Z\pm S\pm 2)}$", central assembly point and balance point Coincidence; $[(\eta)\sim(1-\eta^2)]^{K(Z)/t=0}$; wherein the calculation of the imaginary number is converted to the linear calculation of the real number by "rotation".

(6) Information-control center zero point, to ensure that the information output and input have a unified time series, and meet the consistency of the central output collection point and the input acceptance point; $[(\eta)-(1-\eta^2)]^{K(Z)/t}=0$; In particular, the information algorithm is a unit body composed of the concept of all elements, which does not tolerate external interference, and is safe, stable and reliable.

In this way, the unlabeled-circle logarithm has the functions of "arithmetic-geometry-algebra-group theory" to form a whole, and perform arithmetic analysis, calculation, and intelligence in the "inner and outer interval" of the interval [0 to 1].

2.4, the center point of the cluster set, weighted average, pre-training model

According to Brouwer's fixed point theorem [3] 3-p324, the set of boundary points has the same value as a set of so-called "fixed central zero points". Therefore, the central zero point set and the boundary set have equivalent transformation digits. However, after the central zero point set is introduced into the circle logarithm, it can coincide with the circle; similarly, the length of any boundary curve remains unchanged, and the circle logarithm can be converted into a true center circle, and the center circle becomes the function average value or pre-training model.

As in the example of the above-mentioned circular plate, (OC)=(OO') is the radius, make a circle, and call it "without label-circle logarithm". (OC) The logarithm of the circle maintains the characteristics of the element's internal probability (including the distance and angle of the vector), and converts asymmetry into relative symmetry.

Among them: (AB) the movement of the geometric center point reflects the change of the weight of the cluster set, $(1-\eta^2)=(OC)/R_0=(OC)^2/R_0^2=(0 \text{ to } 1)$. The geometric center point (O) is the maximum number of circle logarithms "1", and the boundary (AB) $(1-\eta^2)=(0 \text{ or } 1)$.

Define 2.4.1 the weighted average of the cluster set; the product combination of the cluster set elements and the distance,

(2.4.1) $F(\omega_{ji})=[\sum_{(i=S)}(X_{jik}\omega_{jik}r_{jik})]/[\sum_{(i=S)}(X_{jik}r_{jik})]$;

(2.4.2) $F(r_{jik})=[\sum_{(i=S)}(X_{jik}\omega_{jik}r_{jik})]/[\sum_{(i=S)}(X_{jik}\omega_{jik})]$;

This is Einstein's weighted average formula. The flaw of the formula is that it cannot reflect relative symmetry. The relative symmetry means that the asymmetry can be converted into relative symmetry through the circle logarithm. Once the circle logarithm is removed, its asymmetry can be restored.

Define2.4.2 the center zero point of the cluster set $[\sum_{(i=S)}(1/Q)(X_{jik}\omega_{jik}r_{jik})]^{K(Z)/t}$

(2.4.3) $[(\eta_\omega) \text{ or } (1-\eta_\omega^2)]^{K(Z)/t}=\{[\sum_{(i=S)}(X_{jik}\omega_{jik}r_{jik})]/[(X_{00jiki}\omega_{0jik}r_{0jik})]\}^{K(Z)/t}$

$=\{[\sum_{(i=S)}(X_{jik})]/[(X_{0jiik})]\}^{K(Z)/t}$

$=\{[\sum_{(i=S)}(\omega_{jik})]/[(\omega_{0jik})]\}^{K(Z/t}$

$=\{[\sum_{(i=S)}(r_{jik})]/[(r_{0jik})]\}^{K(Z/t}$

$=[\sum_{(i=A)} (X_{00jiki}\omega_{0jik}r_{0jik})+\sum_{(i=B)} (X_{00jiki}\omega_{0jik}r_{0jik})] / [(X_{00jiki}\omega_{0jik}r_{0jik})]\}^{K (Z)/t}$
$=\{(+\eta_{\omega A})\pm (-\eta_{\omega B})\}^{K (Z)/t}$ or $\{(1-\eta_{\omega A}{}^{2})^{+1}\pm (1-\eta_{\omega B}{}^{2})^{-1}\}^{K (Z)/t}$
$=\{0 \text{ or } 1\}^{K (Z)/t}$;

Define 2.4.3 the cluster set weight set and covariance. Covariance refers to clustering each element, combining sub-items (Xjiωji), taking the center zero as the center of symmetry, and having the same logarithmic factor of the circle of change.

(2.4.4) $[\sum_{(i=S)} (\omega_{ji}X_{ji}))]/[\sum_{(i=S)} (1/n) (X_{ji})]=\{[(1-\eta_{\omega B}{}^{2}) \pm (1-\eta_{\omega A}{}^{2})]$
$=[(\eta_{\omega A})\pm(\eta_{\omega B})]\}^{K (Z)/t}= \{0 \text{ or } 1\}^{K (Z)/t}$;
=[(ηωA)±(ηωB)]}K (Z)/t= {0 or 1}K (Z)/t;

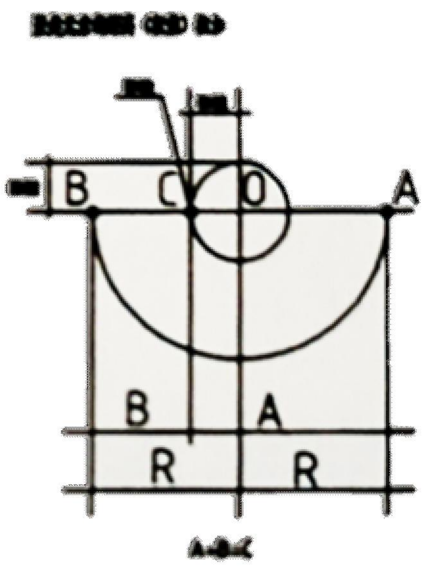


Figure 2.2 Addition of cluster set elements (distance oints, weights)

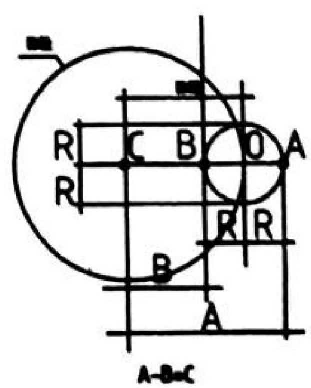


Figure 2.3 Subtraction of cluster set elements (distance outside points, orbits

Define 2.4.4the cluster set The weights of the center points of the two asymmetric cluster sets are linearly added, (A-B)<(A+B) is called the interval, precession, and logarithm of the positive set circle. As shown in **Figure 2.2.**

Define2.4.5 the cluster set The weights of the center points of the two asymmetric cluster sets are linearly subtracted, (A-B)>(A+B) is called the interval outside the point, rotation, and the logarithm of the negative set circle. As shown in **Figure 2.3.**

According to the "inter-point interval" and "inter-point interval" according to the two intervals inside and outside, it reflects that the point "C=$(1-\eta^2)^{K (Z)/t}$ (A+B)" can move. The "OC" radius is not only the logarithm of the circle, but also the set point of the cluster set; in the same way, the "O" point and "O'=C" are also the set point of the cluster set. Rotating at the geometric center "O" point of a circle (any closed curve or surface can also be converted into a circle) will not change the characteristics of the cluster itself. Therefore, the coordinates can be arbitrarily selected here, and the characteristics of the cluster set are also not changed.

The root is based on the "point-in-point interval" and "point-outside interval" of the two intervals between inside and outside, reflecting that the point "C=(1-η2)K (Z)/t (A+B)" can move. The "OC" radius is not only the logarithm of the circle, but also the set point of the cluster set; in the same way, the "O" point and "O'=C" are also the set point of the cluster set. Rotating at the geometric center "O" point of a circle (any closed curve or surface can also be converted into a circle) will not change the characteristics of the cluster itself. Therefore, the coordinates can be arbitrarily selected here, and the characteristics of the cluster set are also not changed.

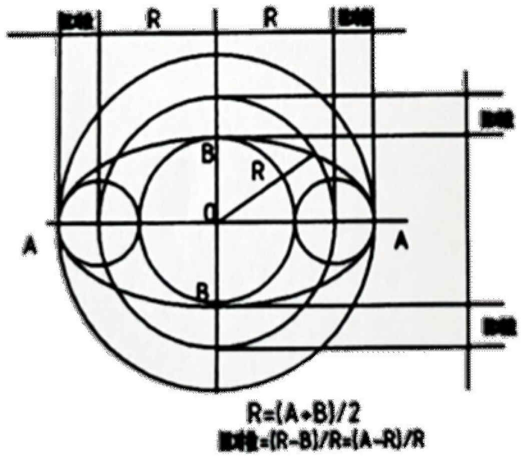
Define 2.4.6 the clustering set and add the weights of the two asymmetric cluster centers orthogonally to form the central ellipse and the logarithm of the circle; Figure 2.4 .

(2.4.5) $(1-\eta^2)^{K (Z)/t}=(A-B)/(A+B)=(R-B)/R=(A-R)/R$;

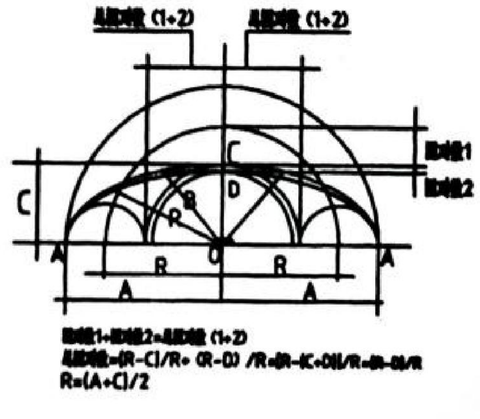
2.4.7 Definition of the cluster set The weights of the three asymmetric cluster centers are orthogonally summed to form a partial center ellipse. Figure 2.5

(2.4.6) $(1-\eta^2)^{K (Z/}=(R-C)/R+(C-D)/R=(R-D)/R$;

According to the definition of asymmetry, any closed curve and surface can be converted into a central ellipse, eccentric ellipse, and a perfect central circle through the logarithm of the circle, so that a large enough circle (dot, surface, sphere) can be established to contain clusters The individual items of the set become "concentric circles".



(Figure 2.4 Schematic diagram of the logarithm of the center zero-point circle for multiple cluster elements)



(Figure 2.5 Schematic diagram of the logarithm of the off-center ellipse of multiple cluster elements).

Define 2.4.8 the maximum circle logarithm corresponding to the center point of the uniform multi-cluster of the cluster set $[(\eta_{\omega max})\approx(1-\eta_{\omega max}{}^{2})]^{K(Z)/t}=\{0`\text{or } 1)^{K(Z)/t}$; for any height For order calculus, the derivatives are all (0).

Define 2.4.9 the logarithm of the probability circle.

$$(2.4.7)\ (1-\eta_H{}^2)=[\{X_a\omega_a\}r_a+\{X_b\omega_b\}r_b+\cdots+\{X_q\omega_q\}r_q]/[\{X_{jik}\omega_{jik}\}R_{jik}]$$
$$=(1-\eta_{Ha}{}^2)+(1-\eta_{Hb}{}^2)+\cdots+(1-\eta_{Hg}{}^2)$$
$$=\sum_{(i=+S)}(1-\eta_{Hjik}{}^2)^{+1}+\sum_{(i=S)}(1-\eta_{Hjik})^0+\sum_{(i=-S)}(1-\eta_{Hjik})^{-1}$$
$$=\{0,\ 1/2,\ 1\};$$

Define 2.4.10 the topological circle logarithm

$$(2.4.8)\ (1-\eta_T{}^2)=[\{X_{0a}\omega_{0a}\}r_{0a}+\{X_{0b}\omega_{0b}\}r_{0b}+\cdots+\{X_{0q}\omega_{0q}\}r_{0q}]/[\{X_{0jik}\omega_{0jik}\}R_{0jik}]$$
$$=(1-\eta_{Ta}{}^2)+(1-\eta_{Tb}{}^2)+\cdots+(1-\eta_{Tg}{}^2)$$
$$=\sum_{(i=+S)}(1-\eta_{Tjik}{}^2)^{+1}+\sum_{(i=S)}(1-\eta_{Tjik})^0+\sum_{(i=-S)}(1-\eta_{Tjik})^{-1}$$
$$=\{0\text{to}1\};$$

Define 2.4.11 the maximum and minimum circle logarithms when the center zero point

(2.4.9) $(1-\eta_H{}^2)=\{1/2\}$, $(1-\eta_T{}^2)=\{1\}$,the maximum circle logarithm;

When the central zero point

(2.4.10) $(1-\eta_H{}^2)=\{0,1\}$时, $(1-\eta_T{}^2)=\{0\}$, the smallest circle log;

Define 2.4.12 the exact center circle-concentric circles, time series K (Z)/t:

$$(2.4.11)\quad (1-\eta_\Omega{}^2)^{K(Z)/t}[\sum_{(i=S)}\{\prod_{(i=S)}\{X_0\omega_0R_0\}]^{K(Z)/t}$$

Define 2.4.13 the central ellipse:

$$(2.4.12)\quad [(1+\eta_{\Omega A})+(1-\eta_{\Omega B})]^{K(Z)/t}[\sum_{(i=S)}\{\prod_{(i=S)}\{X_0\omega_0R_0\}]^{K(Z)/t}$$

Define 2.4.14 the logarithmic circumference of the circle (reflected as the positive circumference and the center zero point vector)

(2.4.13) $(1-\eta_r{}^2)^{K(Z)/t}\cdot(1-\eta_\theta{}^2)^{K(Z)/t}=1$: (two-dimensional plane, curve)

(2.4.14) $(1-\eta_r{}^2)^{K(Z)/t}\cdot(1-\eta_{\theta\Phi}{}^2)^{K(Z)/t}=1$: (three-dimensional surface, torus, sphere, ring)

(2.4.15) $\{F_{R\theta\Phi}\}^{K(Z)/t}=(1-\eta^2)^{K(Z)/t}[(1-\eta_{rjik}{}^2)\cdot(1-\eta_{R\theta\Phi}{}^2)]^{K(Z)/t}\{F_{0R\theta\Phi}\}$

Define 2.4.15 the pre-trained model. Refers to a trained and saved network. The network has usually been trained on some large data sets. Well-known ones include VGG16 and MaskR-CNN in the field of computer vision and BERT and GPT-3 in the field of natural language processing. However, the pre-training model through ImageNet may have many defects $\{X\}^{K(Z)/t}\neq\{Y\}^{K(Z)/t}$, for example, the number is limited, the manual design of the label is biased, and the downstream tasks have different characteristics. It is difficult to control and expand the data. Directly introduce the logarithm of the circle and the center zero to achieve zero error without label.

(2.4.16) $\{X\}^{K(Z/t}=[(\eta_\omega)\text{ or }(1-\eta_\omega{}^2)]^{K(Z)/t}\{Y\}^{K}$

$^{(Z)/t}$; $\{Y\}^{K (Z/t}=\{X_0\}^{K (Z)/t}$;

Definition 2.4.16 the unsupervised learning-circle logarithm algorithm is to assign pre-trained models to unlabeled ones. Belonging to the characteristic modulus (average value of positive, medium and negative power functions)-any high-order calculus polynomial, converted into a circle logarithm with the base of the unlabeled circle logarithm, and together form a synchronous power function-time series for spatial expansion.

3. Unsupervised learning-basic principles of circular logarithm

On August 22, 2020, at the Youth Computer Science and Technology Forum of the Chinese Computer Society, participating experts raised the focus of the conference: "How to make unsupervised learning the next stop for artificial intelligence?".

Our team has proved through rigorous mathematics that the cluster set is multiplied by different combinations of multiple cluster elements, and becomes any high-dimensional calculus polynomial, which can be converted into logarithm of circle-unsupervised learning and feature mode, and get root form Solve.

3.1. Define the central zero point set of the multi-cluster set (multimedia state)-recognition-classification-no label recognition

Define 3.1.1 the cluster set and the central zero point set of the multi-cluster sub-items $Q^{K (Z)/t}=\{A,B,C,D\}^{K (Z)/t}$, and the circle logarithm.

(3.1.1) $(1-\eta^2)^{K (Z)/t}= (1-\eta_A{}^2)^{K (Z+A)/t}+ (1-\eta_B{}^2)^{K (Z+B)/t}+ (1-\eta_C{}^2)^{K (Z+C)/t}+ (1-\eta_D{}^2)^{K (Z+D)/t}$;

Define 3.1.2 the central zero point set and circle logarithm of the multi-cluster elements of the cluster set.

(3.1.2) $(1-\eta_A{}^2)^{K (Z+A)/t}=(1-\eta_1{}^2)^{K (Z+A)/t}+(1-\eta_2{}^2)^{K (Z+A)/t}$;

(3.1.3) $(1-\eta_B{}^2)^{K (Z+B)/t}=(1-\eta_3{}^2)^{K (Z+B)/t}+(1-\eta_4{}^2)^{K (Z+B)/t}+(1-\eta_5{}^2)^{K (Z+B)/t}$;

(3.1.4) $(1-\eta_C{}^2)^{K (Z+C)/t}= (1-\eta_6{}^2)^{K (Z+C)/t}+ (1-\eta_7{}^2)^{K (Z+C)/t}$;

(3.1.5) $(1-\eta_D{}^2)^{K (Z+D)/t}= (1-\eta_8{}^2)^{K (Z+D)/t}= (1-\eta_9{}^2)^{K (Z+D)/t}= (1-\eta_{10}{}^2)^{K (Z+D)/t}$;

3.2. The central zero point set of the multi-cluster set (multimediastate)-recognition -classification-no label recognition

there are 10 cluster set sub-items mixed together with number {1,2,3...10}, Make a large enough circle (center O) to include all cluster set sub-items, each cluster set sub-item Xjiωji has its own set center point Xji and circle logarithmic radius Xjiωji; orbit radius XjiΩji (ie circle Logarithmic internal and external separation points). **Figure 3.1 shows recognition analysis:**

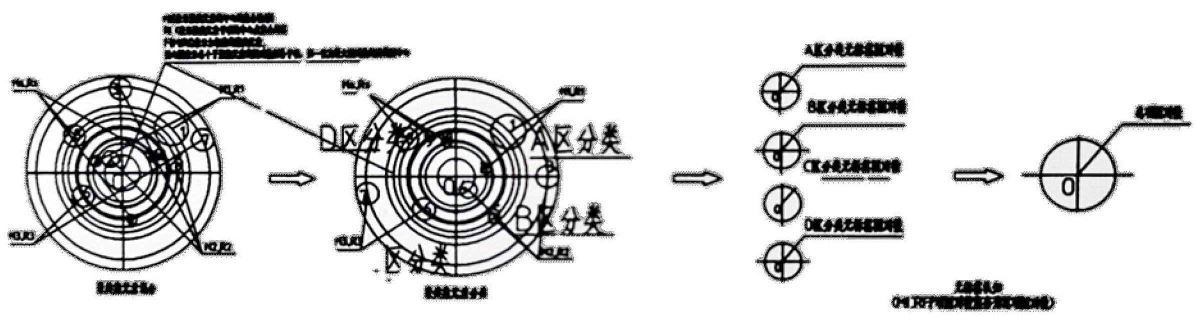


Figure 3.1 Schematic diagram of center zero set of multi-cluster set (multimedia state)-recognition-classification-no label recognition

(1) Recognition analysis: distinguish the sub-items Xjiωji of various cluster sets of the same kind, such as: the orbit radius Ω_{jik} is unchanged, and the rotation is in the four partitions of the two-dimensional plane $\{X_{\omega jik}\}1$; $\{X_{\omega jik}\}2$; $\{ X_{\omega jik}\}3$; $\{X_{\omega jik}\}4$; sub-items of clustering set.

(2) Clustering set neural network, each clustering set sub-item Xjiωji has mutual entanglement, and it can also be discrete symmetric and asymmetric clustering set sub-items, which can be assembled to form a whole circle.

3.3 Schematic diagram of neural network process

The characteristic of neural network is that each level node of the multi-media clustering set has non-repetitive, can be missing, and cannot be added "1-1; 2-2; 3-3;...qq" combination set is polynomial level, polynomial level The combination coefficient satisfies the regularized distribution, and the characteristic mode (average value of the positive and inverse functions) is obtained, which represents the characteristics of various scientific fields. At the same time, the unlabeled circle logarithm, which is converted into reciprocity, double space and single space, is in the range of [0 to 1], and a unified time series is used for infinite analysis and cognition. As shown in Figure Figure 3.2.

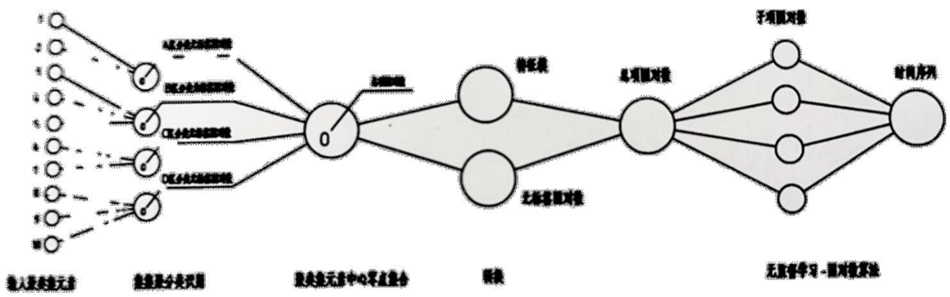


Figure 3.2 is the unlabeled cognition map of the clustering set.

After the recognition classification set is "normalized" into linear analysis, it is divided into two parts: rotation and precession, which fully meets the parallel analysis cognition of each multi-media state. It has the following functions:

(1) Represents the type of linear, planar, and multi-dimensional vortex space with no label-circle logarithm in the cluster set.

(a). Unlabeled-circle logarithm $(1-\eta^2)^{k\ (Z)/t}=\{0 \text{ or } 1\}^{k\ (Z)/t}$ means discrete, asymmetric, and probability calculation:

(b). Unlabeled-circle logarithm $(1-\eta^2)^{k\ (Z)/t}=\{0 \text{ to } 1\}^{k\ (Z)/t}$ means entangled, topological calculation:

(c). Unlabeled-circle logarithm $(1-\eta^2)^{k\ (Z)/t}=\{0, (1/2), 1\}^{k\ (Z)/t}$ means zero point, boundary, threshold: (1/2) Is the zero point of the relative symmetric center, where: when any higher order derivative is 0, the circle logarithm has the largest value. The boundary is $\{0 \text{ or } 1\}^{k\ (Z)/t}$.

(2) Represents the ability to discriminate properties of the cluster set.

(a). Unlabeled-circle logarithm $(1-\eta^2)^{k\ (Z)/t}\leq\{1\}^{k\ (Z)/t}$ property K=+1: indicates that the clustering set belongs to convergence;

(b) Unlabeled-circle logarithm $(1-\eta^2)^{k\ (Z)/t}\geq\{1\}^{k\ (Z)/t}$ property K=-1; indicating that the clustering set is diffusive;

(c). Unlabeled-circle logarithm $(1-\eta^2)^{k\ (Z)/t}=\{(1/2)\}^{k\ (Z)/t}$ property K=±1 or ±0; it means clustering set balance and conversion, Threshold;

(3) Multimedia state with high parallelism: as long as it satisfies the combination of interaction or asymmetry to achieve unity power function probability and relative symmetry, various multi-media states (M) and various levels in the multi-media state, The combination is a common time series for parallel and synchronized continuous frame expansion.

(3.3.1) $K\ (Z)/t=K\ (Z\pm S\pm Q\pm M\pm N\pm q)/t=2\pi\bullet K\ (Z\pm S\pm Q\pm M\pm N\pm q)/t$;

(4) High generalization: Because it is an irrelevant mathematical model, there is no specific element content or element calculation without label, it has multi-regional, multi-level reciprocity, isomorphism, and relative symmetry. It unifies the combination relationship between linear and non-linear, widely adapting to the multi-media capability.

(3.3.2) $(1-\eta^2)^{K\ (Z\pm S\pm Q\pm M\pm N\pm q)/t}=\{X_0/D_0\}^{K\ (Z\pm S\pm Q\pm M\pm N\pm q)/t}=\{X_0^2/D_0^2\}^{K\ (Z\pm S\pm Q\pm M\pm N\pm q)/t}$;

(5) According to the unlabeled logarithm of the probability circle and the logarithm of the topological circle, as well as the characteristic model, the following can be analyzed, predicted and recognized:

The dimension of the unknown variable or the number of elements {X} (prime numbers, integers), and the composition rules (or natural number substitution and password notification) become the logarithm of the central relative symmetric probability circle, and the properties of the elements remain unchanged.

(3.3.3) $(1-\eta_H^2)^{k\ (Z/t)}=\sum_{(i=S)}(\eta_{Hi})$

(probabilistic linear combination)

(3.3.4) $\sum_{(i=S)}(\eta_{Hi}^2)=\{1\}^{k\ (Z/t)}$;

(probability combination factor of circular rotation surface);

(3.3.5) $\sum_{(i=S)}\prod_{(i=j)}(\eta_{Hi}^2)=\{1\}^{k\ (Z/t)}$;

(probability factor of any combination of sub-items).;

(3.3.6) $(1-\eta_\omega^2)^{k\ (Z/t)}=\sum_{(i=S)}(\eta_{\omega i})$;

(linear combination of asymmetry probability)

(3.3.7) $\sum_{(i=S)}(\eta_{Hi}^2)=\{0 \text{ or } 1\}^{k\ (Z/t)}$;

(the probability combination factor of the rotating surface,

(3.3.8) $(1-\eta_T^2)^{k\ (Z/t)}=\sum_{(i=S)}(\eta_{Ti})=\{0 \text{ to} 1\}^{k\ (Z/t)}$;

(topological factor of any combination of sub-items).

(3.3.9) $(1-\eta^2)^{k\ (Z/t)}=(1-\eta_H^2)^{k\ (Z/t)}\bullet(1-\eta_\omega^2)^{k\ (Z/t)}\bullet(1-\eta_T^2)^{k\ (Z/t)}=\{0 \text{ to } 1\}$;

(6) The probability circle can be calculated by the

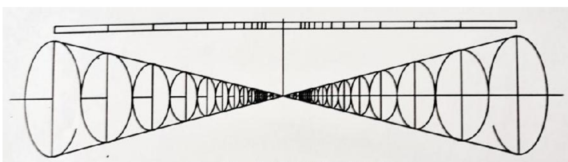
boundary condition D, the expected function D0, and the combination of cluster set elements

The logarithm $(1-\eta_H)^{k\,(Z/t)}$ and the logarithm of the topological circle (1-η)k (Z/t), know its probability distribution-topological combination state. The specific algorithm for solving the internal elements of the unit probability and the reverse analysis of cognitive reasoning are also valid.

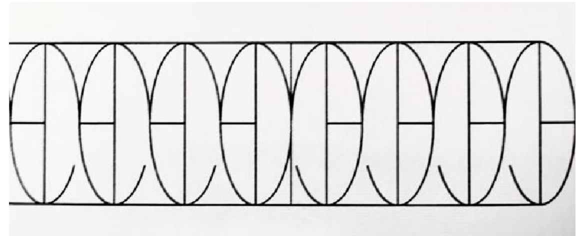
(3.3.10) $X_i=(1-\eta_{Hi}{}^2)^{k\,(Z/t)}\bullet(1-\eta_\omega{}^2)^{k\,(Z/t)}\bullet(1-\eta_T{}^2)^{k\,(Z/t)}\{D_0\}$;(Forward, fitting, input);

(3.3.11) $Y_i=(1-\eta_{Hi}{}^2)^{k\,(Z/t)}\bullet(1-\eta_\omega{}^2)^{k\,(Z/t)}\bullet(1-\eta_T{}^2)^{k\,(Z/t)}\{X_0\}$;(Reverse, self-correction, output);

(7) Space display of graph neural network: add {D} corresponding toperiodic 2π • *K (Z±S±Q±M±N±q)/t* • {D}, in time series and then corresponding to the rotation of geometric plane and curved surface space Move to expand.



(Figure 3.3 Schematic diagram of the unfolding of the vortex structure at the center of the circle logarithm)



(Figure 3.4 Schematic diagram of the spiral structure of the zero point of the circle logarithm center)

Finally, any mathematical model (characteristic mode-arbitrary higher-order calculus) converts the "independent mathematical model, unlabeled" circle logarithm to unify the problems of arbitrary linearity and nonlinearity, symmetry and asymmetry, discreteness and entanglement in a common time The concentric circles of the sequence are conducive to solving the current problems of computer programming, achieving simplicity, accuracy, reliability and stability. It is expected to realize the mathematical integration of algebra, number theory, group, and geometric space proposed in the Langlands Program for data recognition and cognitive analysis.

4. Analysis and identification of cluster sets

Clustering set (Z) is a collection of highly parallel multi-media states and generalized clustering (S). The sub-items include area (Q), multi-media state (M), level, calculus order (N), and combined elements (q), time (t), compose the dynamically balanced vortex algebra-geometry-group theory-arithmetic space, and carry out a unified time series .

$$K\,(Z)/t=K\,(Z\pm S\pm Q\pm M\pm N\pm q\,)/t=2\pi\bullet K\,(Z\pm S\pm Q\pm M\pm N\pm q)/t;$$

Involving numerical taxonomy, it is a quantitative study of big data and an important method of data mining, which is called pattern recognition. It is used to discover different categories of data and identify specific distributions and patterns in the data. Provide the basis of the algorithm according to the analysis result of the cluster set and the law of numerical change. The so-called cluster set analysis is that a batch of intersecting, influencing, and ambiguous data objects is a collection of non-repetitive combinations of each sub-item, making each cluster sub-item similar to each other and becoming a feature model.

4.1. Structural equation model

The main content of pattern recognition is pattern classification, pattern clustering, extraction and selection of feature models, namely structural equation models, and unlabeled cognition. The structural equation model is a very common modeling technique in the scientific field. It is a combination of factor analysis or path analysis. We often study the relationship between latent variables. These relationships are embodied in regression or path coefficients. Some are called covariance structure models, and some are called linear structure models, which are visualized and displayed path diagrams.

Many new theories and algorithms have emerged in the research of pattern recognition for decades. At present, the collection of interfaces is adopted, and the improvement and expansion here is the collection of the central zero point, which appears as a new concept. The structural equation model is called characteristic mode, which is the expansion of traditional calculus polynomials into the average value of positive, middle and inverse functions, and the sub-terms are the combined average values of all levels. The functions that reflect the various types of symmetry and asymmetry, discrete and entangled, can be converted into a unified circular logarithmic graph algorithm.

(4.4.1) $AX^{K\,(Z\pm S\pm Q\pm M\pm N\pm q\pm 0)/t} \pm BX^{K\,(Z\pm S\pm Q\pm M\pm N\pm q\pm 1)/t} + \cdots \pm MX^{K\,(Z\pm S\pm Q\pm M\pm N\pm q\pm m)/t} + D$
$=\sum_{(i=S)}\{(1/C_{(Z\pm S\pm Q\pm M\pm N\pm q-0)})^{K}\prod_{(i=q)}X\} \cdot \sum_{(i=S)}\{(1/C_{(Z\pm S\pm Q\pm M\pm N\pm q+0)})^{K}\prod_{(i=q)}D\}^{K\,(Z)/t}$
$=(1-\eta^2)^{K\,(Z)/t}\{X_0\pm D_0\}^{K\,(Z)/t}$
$=(1-\eta^2)^{K\,(Z)/t}\{0$ 或 $2\}^{K\,(Z)/t}\{D_0\}^{K\,(Z)/t}$;
(4.1.2) $(1-\eta^2)^{K\,(Z)/t}=(1-\eta_\omega^2)^{K\,(Z)/t}(1-\eta_H^2)^{K\,(Z)/t}(1-\eta_T^2)^{K\,(Z)/t}=\{0 \text{ to } 1\}^{K\,(Z)/t}$;

Formula (4.1) contains the close combination of characteristic mode and circle logarithm, and the vortex structure in the same time series is called circle logarithm map algorithm. Formula (4.2) is the logarithm of the circle irrelevant to the mathematical model, called unsupervised learning or unlabeled model, including the logarithm of the unit probability circle t $(1-\eta_H^2)^{K\,(Z)/t}$ and the logarithm of the relative symmetric circle of the center zero point ($1-\eta_\omega^2)^{K\,(Z)/t}$ and the logarithm of the topological isomorphism circle $(1-\eta_T^2)^{K\,(Z)/t}$ are called three unitary gauge invariance. $\{0\}^{K\,(Z)/t}$ represents the balance, rotation, and threshold of the central zero point; $\{2\}^{K\,(Z)/t}$ represents superposition and precession, which jointly carry out the five-dimensional vortex dynamic unfolding. Among them, the non-linear combination problem of any cluster set is converted into an isomorphic linear problem through the normalization of the circle logarithm, and then converted to the arithmetic analysis and cognition of the unlabeled circle logarithm linear factor, which is convenient for linear visualization Display the path map and integrate many existing pattern recognition algorithms.

4.2. The central zero point set of the cluster set

Pattern recognition has many clusters in different categories and fields, and there are different levels of combination of elements between clusters. Some of the clusters are single attributes that can be clearly identified, and some are multi-attribute or fuzzy. Clearly identify. Especially when they are mixed together, the interface analysis used in pattern recognition is difficult to recognize, which brings difficulties to the establishment of model features and machine learning, or the calculation technology program is complicated, which limits the computer function and efficiency.

4.1 Define the central zero point is the concentrated point of each closed cluster, which represents the numerical value, characteristics, balance, symmetry and other elements of each cluster, forming a probability unit body. There are two types of center zero point: geometric center point and center of gravity point, which can be separated, combined, and movable. In other words, a cluster has only one center zero point.

4.2 The method of defining the central zero point: all elements (Z) of an infinite clustering set are mapped to points on a two-dimensional plane, including high parallel regions, classification (Q) multi-media state (M) and the level (N) to which they belong, Element combination (q), dynamic is combined with time (t). Make a large enough circle, the center of the circle or the boundary of the circle contains all the element values of the cluster set, and the distance from each point to the center of the circle is called the weight, called the orbit radius. Combine in the same type to form a sub-item circle, including the value of the sub-item and the radius of the orbit. Keeping the characteristics of the element, move the sub-item circle to form a series of concentric circles. Time series composed of concentric circles $K\,(Z)/t=K\,(Z\pm S\pm Q\pm M\pm N\pm q\pm q_{jik})/t$

4.3. The central zero point has the following functions:

(1) The radius of the circular orbit can be rotated, and the angle of rotation is recorded separately. Convert high-dimensional nonlinear vectors into linear problems on the number axis.

(2) Maintain the value and status of each sub-item and level combination to become a unitary probability circle with a common time series. The number of circle pairs is $(1-\eta_H^2)^{K\,(Z)/t}=1$;

(3) The asymmetry of the numerical value and state of each sub-item and level combination becomes relative symmetry, that is, the balance, symmetry, rotation conversion and threshold value of the circle center on the left and right sides of the number axis are maintained. The circle logarithm is $(1-\eta_H^2)^{K\,(Z)/t}=\{0,(1/2),1\}^{K\,(Z)/t}$;

(4), the maximum circle logarithm value representing the orbital radius of the sub-item in the great circle is $(1-\eta_\omega^2)^{K\,(Z)/t}=\{1\}^{K\,(Z)/t}$;

(5) The logarithm of the topological combination state circle representing the orbital radius of the sub-item in the great circle is $(1-\eta_\omega^2)^{K\,(Z)/t}=\{0 \text{ to } 1\}^{K\,(Z)/t}$;

In this way, the changes of several logarithms of circles between 0 and 1, become the logarithms of circles and become unsupervised learning or unlabeled arithmetic superposition. The function that makes the central zero-probability-topology-time series into one, improves the analysis and cognitive functions of traditional pattern recognition.

4.3. The relationship between the zero point of the circle center and the concentration point of any closed curve

The traditional pattern recognition cluster set uses Bayesian probability theorem, or Einstein's weighted average:

$\omega_{jik}=\sum_{(i=S)}(x_{j1}\omega_{j1}r_{j1})/\sum_{(i=S)}(x_{jik}r_{jik})$; (point within distance)

and $R_{jik}=\sum_{(i=S)}(x_{jik}\omega_{jik}r_{jik})/\sum_{(i=S)}(_{jik}\omega_{jik})$; (distance outside point);

It cannot reflect the asymmetric distribution of probability, and it is difficult to obtain a "loss function". The loss function is due to the asymmetric probability distribution and the topological orbital position R_{j1k} of ω_{j1k}. This loss function is measured by the distance between the center zero point and the coordinate center point. For this reason, this "measure" is realized by introducing the concept of the geometric perfect circle center or the combined function average (characteristic mode) of the center zero point. In the clustering set of high parallel multi-media state, each cluster of the same category contains different cluster elements, levels, probabilities, topologies, and the random time formed cannot be the same. How to coordinate and adjust them to have a common time sequence to achieve synchronization Expand?

Definition 4.3.1 The cluster set is called the "center point (gravity concentration point)" in any closed curve to represent the set. Under the same element characteristics, the center point position corresponding to the weight and track can be moved to the corresponding circle center position.

Definition 4.3.2 The cluster set is expressed as the point inside the curve enclosed by a perfect circle to indicate that the circle set is merged with the "center point (gravity concentration point)". Called "center zero"

Traditional pattern recognition cannot satisfy the three element variables $\{x_{jik}\}$, weights $\{\omega_{jik}\}$, orbits $\{r_{jik}\}$, and cluster combinations $\{x_{jik}\omega_{jik}\}$, $\{x_{jiik}r_{jik}\}$, $\{r_{jik}\omega_{jik}\}$, $\{x_{jik}\omega_{jik}r_{jik}\}$, $\{x_{jik}\text{-}\omega_{jik}\text{-}r_{jik}\}$ the difference and the covariant relationship of elements The difference between the center point and the center point is called the circle logarithm or loss function.

The difference between the center point and the center point is called the circle logarithm or loss function.

(1) For the discrete type: under the condition that the total element $\{x_{jik}\}$ remains unchanged, the distance radius (weight, orbit), the weight, and the value and position of the zero point of the probability circle center to describe the probability of the global full circle asymmetry.

(2) For the entangled type: under the condition that the total elements $\{x_{jik}\}$ remain unchanged, the distance radius (weight, orbit) of the element combination topology describing the symmetry and the value and position of the zero point of the topological circle center change.

Discrete asymmetric element changes and entangled symmetric element distance changes have the same circle logarithm form,

(4.3.1) $\{x_{jik}\}^{K(Z\pm S\pm M)/t}=[\sum_{(i=S)}\prod_{(i=p)}(x_{ji})/\sum_{(i=S)}\{x_{jki}\}]^{K(Z\pm S\pm M)/t}$
$/\{x_{0jik}\}^{K(Z\pm S\pm M)/t}\cdot\{x_{0jik}\}^{K(Z\pm S\pm M)/t}$
$=(1-\eta^2)\{X_0\}^{K(Z\pm S\pm M)/t}$;

(4.3.2) $\{\omega_{jik}\}^{K(Z\pm S\pm M)/t}=[\sum_{(i=S)}\prod_{(i=p)}(x_{jik}\omega_{jik})/\sum_{(i=S)}\{\omega_{jik}\}]^{K(Z\pm S\pm M)/t}$
$/\{\Omega_0\}^{K(Z\pm S\pm M)/t}\cdot\{\Omega_0\}^{K(Z\pm S\pm M)/t}$
$=(1-\eta^2)\{\Omega_0\}^{K(Z\pm S\pm M)/t}$;

(4.3.3) $\{r_{jik}\}^{K(Z\pm S\pm M)/t}=[\sum_{(i=S)}\prod_{(i=p)}(x_{jik}\omega_{jik}r_{jik})/\sum_{(i=S)}\{x_{jik}\omega_{jik}\}]^{K(Z\pm S\pm M)/t}$
$/\{R_0\}^{K(Z\pm S\pm M)/t}\cdot\{R_0\}^{K(Z\pm S\pm M)/t}$
$=(1-\eta^2)\{R_{0ji}\}^{K(Z\pm S\pm M)/t}$;

(4.3.4) $\{x_{jik}\omega_{jik}r_{jik}\}^{K(Z\pm S\pm M)/t}=[\sum_{(i=S)}\prod_{(i=p)}(x_{jik}\omega_{jki}r_{jik})/\sum_{(i=S)}\{x_{jik}\omega_{jik}r_{jik}\}]^{K(Z\pm S\pm M)/t}$
$/\{x_{0jiik}\omega_{0jik}R_{0jik}\}^{K(Z\pm S\pm M)/t}\cdot\{x_{0jik}\omega_{0jik}R_{0jik}\}^{K(Z\pm S\pm M)/t}$
$=(1-\eta^2)\{X_0\Omega_0R_0\}^{K(Z\pm S\pm M)/t}$;

(4.3.5) $(1-\eta^2)^{K(Z\pm S\pm M)/t}=[(1-\eta_\omega{}^2)\cdot(1-\eta_H{}^2)\cdot(1-\eta_T{}^2)]^{K(Z\pm S\pm M)/t}=\{0\text{ to }1\}^{K(Z\pm S\pm M)/t}$;

In the formula: the symbol subscript represents the average value, $\sum_{(i=S)}$ represents the dimension of S variables, and $\prod_{(i=p)}$ represents the combination of P variables;

(4.3.6) $(1-\eta_H{}^2)^{K(Z\pm S\pm M)/t}=\{1\}^{K(Z\pm S\pm M)/t}$;

represents the probability of clustering elements;

(4.3.7) $(1-\eta_\omega{}^2)^{K(Z\pm S\pm M)/t}=\{0\text{ to }1\}^{K(Z\pm S\pm M)/t}$;

represents the asymmetry probability and weight distribution of cluster elements;

$(1-\eta_T{}^2)=\{0\text{ to }1\}$ represents the asymmetric topology and orbital distribution of cluster elements;

$(1-\eta^2)=\{0\text{ to }1\}$ represents the cluster element unlabeled circle logarithm set;

Among them:

$\{X_0\}^{K(Z\pm S\pm M\pm1)/t}=\sum_{(i=S)}(1/S)^K(x_{jik})^{K(Z\pm S\pm M)/t}$;

(variable, it belongs to the linear analysis of hundreds of millions of one-tuples);

$\{\Omega_0\}^{K(Z\pm S\pm M\pm1)/t}=\sum_{(i=S)}(1/S)^K(\omega_{jik})^{K(Z\pm S\pm M)/t}$;

(weight value, belonging to the linear analysis of hundreds of millions of units);

$\{R_0\}^{K(Z\pm S\pm M\pm 1)/t}=\sum_{(i=S)}(1/S)^K(r_{jik})^{K(Z\pm S\pm M)/t}$;
(orbit, belonging to the linear analysis of hundreds of millions of units);
$\{x_0\Omega_0\}^{K(Z\pm S\pm M\pm 1)/t}=\sum_{(i=S)}(1/S)^K(x_{jik}\omega_{jik})^{K(Z\pm S\pm M)/t}$;
(variables and weights, belonging to the analysis of billions of binary groups);
$\{x_0R_0\}^{K(Z\pm S\pm M\pm 1)/t}=\sum_{(i=S)}(1/S)^K(x_{jik}r_{jik})^{K(Z\pm S\pm M)/t}$;
(Variables and tracks belong to the analysis of billions of binary groups);
$\{R_0\Omega_0\}^{K(Z\pm S\pm M\pm 1)/t}=\sum_{(i=S)}(1/S)^K(r_{jik}\omega_{jik})^{K(Z\pm S\pm M)/t}$;
(Orbits and weights belong to the analysis of billions of binary groups);
$Q_{jik}=\{x_{0jik}\Omega_{0jik}R_{0jik}\}^{K(Z\pm S\pm M\pm 1)/t}=\sum_{(i=S)}(1/S)^K\prod_{(i=p)}(x_{jik}\omega_{jik}r_{jik})^{K(Z\pm S\pm M)/t}$;
(clustering element, belonging to hundreds of millions of triples analysis);

Definition 4.3.3 Under the condition that the average value of the clustering elements is constant, the circle logarithm takes the center of the circle as the coordinate origin to reflect the changes of the asymmetry value, orbit and angle, and is controlled between {0,1/2,1}. {1/2} is called the central zero point; {0,1} is called the boundary.

(a) For the movement of the center zero {ωji} of the "point within distance": reflect the two-dimensional $\{x_{jik}\omega_{jik},\omega_{jik}r_{iik},x_{jik}r_{iik}\}^{K\ (Z\pm S\pm M)/tK\ (Z\pm S\pm M)/t}$; the three-dimensional $\{x_{jik}\omega_{jik}r_{jik}\}^{K\ (Z\pm S\pm M)/t}$ Changes in the values of symmetric clustering elements;

(4.3.8) $(1-\eta_{\omega}^2)^{K(Z\pm S\pm M)/t}=\sum_{(i=S)}\{x_{jik}\}]^{K(Z\pm S\pm M)/t}/\{x_0\}^{K(Z\pm S\pm M)/t}$
$=[(1-\eta_{\omega 1}^2)+(1-\eta_{\omega 2}^2)+\cdots+(1-\eta_{\omega p}^2)]^{K(Z\pm S\pm M)/t}$;

(b) The center zero point of the "distance outside point" reflects the position and topology changes of the two-dimensional $\{x_{jik}\omega_{jik},\omega_{jik}r_{iik},x_{jik}r_{iik}\}^{K\ (Z\pm S\pm M)/tK\ (Z\pm S\pm M)/t}$; three-dimensional $\{x_{jik}\omega_{jik}r_{jik}\}^{K\ (Z\pm S\pm M)/t}$ orbit ;

(4.3.9) $(1-\eta_r^2)^{K(Z\pm S\pm M)/t}=\sum_{(i=S)}\{r_{jik}\}]^{K(Z\pm S\pm M)/t}/\{r_0\}^{K(Z\pm S\pm M)/t}$
$=[(1-\eta_{r1}^2)+(1-\eta_{r2}^2)+\cdots+(1-\eta_{rp}^2)]^{K(Z\pm S\pm M)/t}$;

(c) For "the rotation angle θ, Φ of cluster element points", the central zero point reflects the total element two-dimensional $\{x_{jik}\omega_{jik},\omega_{jik}r_{iik},x_{jik}r_{iik}\}^{K\ (Z\pm S\pm M)/t}$; three-dimensional $\{x_{jik}\omega_{jik}r_{jik}\}^{K\ (Z\pm S\pm M)/t}$ orbital angle change;

(4.3.10) $(1-\eta_{r\theta\Phi}^2)^{K(Z\pm S\pm M)/t}=\sum_{(i=S)}\{r_{\theta\Phi}\}]^{K(Z\pm S\pm M)/t}/\{r_{0r\theta\Phi}\}^{K(Z\pm S\pm M)/t}$
$=[(1-\eta_{r\theta\Phi 1}^2)+(1-\eta_{r\theta\Phi 2}^2)+\cdots+(1-\eta_{r\theta\Phi p}^2)]^{K(Z\pm S\pm M)/t}$;

The central zero point can be moved through the circle logarithm, so that the central point of the collection of any shape and any position can be moved to the geometric center point of the corresponding circle (combined called the central zero point) or the arithmetic average (the average value of the positive, middle and inverse functions), and the composition The geometric homeomorphic center circle of the structure meets that the multi-media clustering elements of each cluster set have a common time sequence.

4.4. Identification of cluster sets and logarithm of circles

Attributes have clear and unclear recognition, noise or external interference and elimination, which is also one of the difficulties of pattern recognition. The logarithm of the circle can play its advantage here and overcome the difficulty of recognition.

(1) Clear and unclear identification:

The base of the circle logarithm has a global concept to deal with unsupervised learning. When there are multiple attributes or interference impurities or indistinguishable elements {xb}, the cluster set elements are $\{X_G\}=\{x_1x_2\cdots x_q\cdots x_g\}$ which can be used in the combined topology Appeared in. The corresponding logarithm of the probability circle is $(1-\eta_{Hg}^2)^{K\ (Z)/t}=\{x_1x_2\cdots x_q\cdots x_g\}/\{X_G\}=\{0 \text{ or } 1\}$. At this time, the computer performs a reductive check and effective pairing,

Let: $\{X_G\}=\{x_1x_2\cdots x_q\cdots x_g\}$; $\{X_{0G}\}^K=\Sigma_{(i=1}(1/S)^K\{x_1^K+x_2^K+x_q^K+x_g^K\}$;
(4.4.1) $(1-\eta_{Hg}^2)^{K(Z\pm S\pm M)/t}=[\{x_1x_2\cdots x_q\ldots x_g\}/\{X_G\}]^{K(Z\pm S\pm M)/t}=\{0 \text{ or } 1\}^{K(Z\pm S\pm M)/t}$;
(4.4.2) $(x_i)^{K(Z\pm S\pm M)/t}=(1-\eta_{Hg}^2)^K\{X_{0B}\}^{K(Z\pm S\pm M)/t}$;
Get:
(4.4.3) $\{X_{0G}\}^{K(Z\pm S\pm M)/t}=[\Sigma_{(i=1}(1/S)^K\{x_1^K+x_2^K+x_q^K+x_g^K\}]^{K(Z\pm S\pm M)/t}$;

Remove or retain the original element attributes and expand with the circle logarithmic time series.

If it is not eliminated, use the coordinated change of the logarithm of the topological circle, select or customize the elements for topological expansion, and maintain the purity and high definition of the elements of the cluster set.

(2) The robustness of round logarithm

Robustness is the robustness of the system. It is the key to the survival of the system under abnormal and dangerous conditions. For example, whether the computer software can not crash or crash in the case of input errors, disk failure, network overload, or intentional attacks is the robustness of the software. According to different definitions of performance, it can be divided into stability robustness and performance robustness. The fixed controller designed with the robustness of the closed-loop system as the goal is called the robust controller.

Based on the logarithmic factor of the circle, the sample module $\{X\}^{K(Z)/}t=\{x_1x_2 \ldots x_q\}^{K(Z)/t}$ of the closed system of all elements of the cluster set is composed of $\{X\}^{K(1)/t}=\{{}^{KS}\sqrt{(x_1x_2\ldots x_q)}\}^{K(1)/t}$ and a specific prior function $\{D_0\}^{K(Z)/t}$. Logarithm of composition circle-no label for specific fixed controller. This controller respectively controls the original data (including text, image, voice and video) inside and outside the cluster set elements,

(4.4.4) $\quad (1-\eta^2)^{K(Z)/t}=\{X\}^{K(Z)/t}/\{D_0\}^{K(Z)/t}=\{0 \text{ to } 1\}^{K(Z\pm S\pm Q\pm M\pm N\pm q)/t}$;

(4.4.5) $\quad (1-\eta^2)^{K(Z)/t}=\{X\}^{K(Z)/t}/\{D_0\}^{K(Z)/t}=\{0, (1/2),1\}^{K(Z\pm S\pm Q\pm M\pm N\pm q)/t}$;

(4.4.6) $\quad (1-\eta^2)^{K(Z)/t}=\{X\pm({}^{KS}\sqrt{D})\}^{K(Z)/t}/\{X\pm D_0\}^{K(Z)/t}=\{0 \text{ to } 1\}^{K(Z\pm S\pm Q\pm M\pm N\pm q)/t}$;

(4.4.7) $\quad (1-\eta^2)^{K(Z)/t}=\{X\pm({}^{KS}\sqrt{D})\}^{K(Z)/t}/\{X\pm D_0\}^{K(Z)/t}=\{0, (1/2),1\}^{K(Z\pm S\pm Q\pm M\pm N\pm q)/t}$;

The formulas (4.4.4) and (4.4.7) are the designed controllers of the two sets of constant template, which are $\{X_0\}^{K(1)/t}={}^{KS}\sqrt{\{x_1x_2 \cdots x_q \cdots \}}^{K(Z)/t}$ and $\{D_0\}^{K(1)/t}=\{{}^{KS}\sqrt{(\prod_{(i=p)}\{D_1D_2\cdots D_q)}\}^{K(Z)/t}$ When the cluster set element system is in the closed condition of each level, it is very sensitive to self-supervision, and it is found that abnormal and interference {XG} appear to increase or decrease the topological combination state, which becomes $\{X_{0G}\}^{K(1)/t}={}^{KS}\sqrt{(\prod_{(i=p)}\{x_1x_2\cdots x_q\cdots\pm x_G)}\}^{K(Z)/t}$ and $\{D_{0Q}\}^{K(1)/t}=\{{}^{KS}\sqrt{(\prod_{(i=p)}\{D_1D_2\cdots D_q\cdots\pm D_G)}\}^{K(Z)/t}$ contradiction, the probability of new asymmetry appears in time With topology, the inherent specific fixed controller cannot be matched, which destroys the original combination coefficients and the time series spanning the characteristic data space. The computer automatically eliminates and stops the interference element, and continues to work according to the original controller. It can also be authenticated through a reverse calculation program, automatically correct and change to the original information password to continue working, ensuring data interpretability, robustness, and privacy.

5. Unsupervised learning of artificial intelligence-circle logarithm algorithm

5.1. Unsupervised learning circle logarithm algorithm:

The typical of classical mathematics is the Riemann function, which is the "sum of reciprocals"

$\zeta(x)=\sum(X_S)$, where the characteristic modulus of "sum of reciprocals and then reciprocals" is performed $\{X\}^{K(Z\pm S\pm Q\pm M\pm N\pm q)/t}$, expressed as a negative power function (K=0,-1), without losing the generality of the Riemann function. Expansion to positive, medium and negative power function characteristic modulus (K=+1,0,-1) to unlabeled-circle logarithm to establish a solid mathematical foundation.

Definition 5.1.1 The first type characteristic mode:

$\{X\}^{K(Z\pm S\pm Q\pm M\pm N\pm q)/t}=\{{}^{KS}\sqrt{\prod_{(i=S)}(X_{qjik}{}^{K})}\}^{K(Z)/t}=\{{}^{KS}\sqrt{D}\}^{K(Z)/t}$;

Definition 5.1.2 The second type characteristic mode:

$\{X_0\}^{K(Z\pm S\pm Q\pm M\pm N\pm q)/t}=\{\sum_{(i=S)}(1/C_{(S\pm q)})^k(\prod_{(i=q)}X_{qjik}{}^{K})\}^{K(Z)/t}=\{D_0\}^{K(Z)/t}$;

Among them: $\{{}^{KS}\sqrt{D}\}^{K(Z)/t}\neq\{D_0\}^{K(Z)/t}$;

By determining the distance and interval between the first type of feature mode and the second type of feature mode, an irrelevant mathematical model, unsupervised learning or unlabeled logarithm of circle is established.

By determining the distance and interval between the first type of feature mode and the second type of feature mode, an irrelevant mathematical model, unsupervised learning or unlabeled logarithm of circle is established.

(1) Logarithm of unlabeled circle.

(5.1.1) $\quad (1-\eta^2)^{K(Z)/t}=\{{}^{KS}\sqrt{X}\}/\{X_0\}^{K(Z)/t}=\{{}^{KS}\sqrt{D}\}/\{D_0\}^{K(Z)/t}$;

(5.1.2) $\quad (1-\eta^2)^{K(Z)/t}=\{X\pm{}^{KS}\sqrt{D}\}/\{X_0\pm D_0\}^{K(Z)/t}=\{{}^{KS}\sqrt{D}\}/\{D_0\}^{K(Z)/t}=\{{}^{KS}\sqrt{X}\}/\{X_0\}^{K(Z)/t}$;

(5.1.3) $\quad (1-\eta^2)^{K(Z)/t}=(1-\eta_H{}^2)^{K(Z)/t}$ (probability) $\cdot$ $(1-\eta_T{}^2)^{K(Z)/t}$ (topology) $\cdot$ $(1-\eta_\omega{}^2)^{K(Z)/t}$ (centrosymmetric)

Among them: $(1-\eta^2)^{K(Z)/t}=\{0 \text{ or } 1\}^{K(Z)/t}$ represents a discrete function; $(1-\eta^2)^{K(Z)/t}=\{0 \text{ to } 1\}^{K(Z)/t}$ represents an entangled function;

(a) Convert the asymmetry to relative symmetry through the logarithm of the circle, and integrate the discrete and entangled types.

(b) Integrate the discrete type and entangled type through the circle logarithm.

(c). It is easy to prove "$\{1/2\}^{K(Z)/t}$ of the center zero point" and "the boundary point $\{0 \text{ or } 1\}^{K(Z)/t}$"

through the simultaneous equations of multiplication and sum of logarithm of the circle ". Ensure the integer expansion of the time series.

(2) The semantics of each level of feature models corresponding to the scientific field:

(5.1.4) $D_0^{K(Z\pm1)/t}=\Sigma_{(i=S)}(1/S)(X_{i(jik)})^{K(Z\pm1)/t}$;

("1-1" combination mathematics is called linear, first-order Calculus; Physically called velocity, momentum);

(5.1.5) $D_0^{K(Z\pm2)/t}=\Sigma_{(i=S}1/C_{(Z+2)})^k\Pi_{(i=2)}(X_{i(jik)}X_{2(jik)})$;

(Non-linear "2-2" combinatorial mathematics is called multiple Quadratic equation, second-order calculus; physical acceleration, kinetic energy, speed of light);

(5.1.6) $D_0^{K(Z\pm q/t}=\Sigma_{(i=S)}(1/C_{(Z+q)})^k\Pi_{(i=q)}(X_{i(jik)}X_{2(jik)}\cdots X_{q(jik)})$;

(non-linear "q-q" combinatorial mathematics It is called n-dimensional equation, high-order calculus, physics is called super acceleration, super kinetic energy, radiation, information transmission);

Where: $\{X, X_0\}=\{X_{q(jik)}, X_{0q(jik)}\}$ unknown function variable (characteristic modulus); known observation function D (characteristic modulus); expected function variable D_0 (characteristic modulus); $(1/C_{(Z+q)})^k$ represents the number of element combinations, The constant combination coefficient means that the number of sub-items and level combinations can be reduced but not increased under closed conditions.

（3）、Feature mode conversion to unlabeled-circle logarithm：

(5.1.7) $Ax^{K(Z\pm S\pm Q\pm M\pm N-0)/t}+Bx^{K(Z\pm S\pm Q\pm M\pm N\pm1)/t}+Cx^{K(Z\pm S\pm Q\pm M\pm N\pm2)/t}+\cdots+Qx^{K(Z\pm S\pm Q\pm M\pm N\pm q)/t}\pm D$

$=x^{(Z\pm S\pm Q\pm M\pm N\pm0)/t}\pm(1/C_{(Z\pm S\pm\pm N\pm1)})^K(X\bullet D_0)^{K(Z\pm S\pm Q\pm M\pm N\pm1)/t}$

$+(1/C_{(Z\pm S\pm\pm N\pm2)})^K(X\bullet D_0)^{K(Z\pm S\pm Q\pm M\pm N\pm2)/t}+\cdots$

$+(1/C_{(Z\pm S\pm\pm N\pm q)})^K(X\bullet D_0)^{K(Z\pm S\pm Q\pm M\pm N\pm q)/t}\pm({}^{K(Z\pm S)}\sqrt{D})^{K(Z\pm S\pm Q\pm M\pm N+0)/t}$

$=(1-\eta^2)^{K(Z)/t}\{X_0\pm D_0\}^{K(Z)/t}$

$=(1-\eta^2)^{K(Z)/t}\{0,2\}\}^{K(Z)/t}\{D_0\}^{K(Z)/t}$;

(5.1.8) $\{X_0\}^{K(Z)/t}=(1-\eta^2)^{K(Z)/tt}\{D_0\}^{K(Z)/t}$;

(5.1.9) $0\le(1-\eta^2)^{K(Z)/t}\le1$;

(4), $\{0,2\}^{k(Z/t)}\bullet\{D_0\}^{K(Z)/t}$ composed of eigenmode equation means that $\{X_0\pm D_0\}^{k(Z/t)}$ has two calculation results

(a), $\{X\text{-}D\}^{k(Z/t)}=\{0\}^{k(Z/t)}$ means rotation (called imaginary number, complex number function), balance, transition point, critical point, threshold.

(b), $\{X+D\}^{k(Z/t)}=\{2\}^{k(Z/t)}$ represents the precession multidimensional combined space.

(c), $\{X\pm D\}^{k(Z/t)}=\{0;2\}^{k(Z/t)}$ represents the multidimensional combined space of precession ± rotation.

Among them: the S-power time series rotates and precesses periodically (2π), meets the stable and reliable circle center zero point, maintains the characteristics of each element of the circle probability, and becomes a five-dimensional vortex space development of unlabeled "concentric circles".

5.2, unlabeled-circle logarithm for natural number time series

Definition 5.2.1 The time series of clustering set K (Z)/t=K (Z±S±Q±M±N±q)/t (including infinity (Z); number of finite elements, total dimension (S); area (Q); medium state (M); level, calculus order (N); clustering (q); clustering element (q)=[xjik (variable)ωjik (weight)rjik (variable)]. Nature Quantum K=(+1, 0,±0,±1, -1). Corresponding to other scientific fields:

Such as: neural network time series: cell body (S); cell nucleus (Q); dendrites (M); axons (N); axons (q); such as quantum time series: Higgs (Higgs) (Q); total quantum (S); first level (M); level, energy.

Quantum orbit change (N); basic physical element (q), K=(+1 (positive particles), 0,±0,±1 (neutral particles, light, heat), -1 (antiparticles).

Such as: gravitational time series: galaxy (Q); number of stars in the galaxy (S); first level (M); level and energy orbit change (N); basic star element (q), K=(+1 (positive gravity) Sub), 0,±0,±1 (neutral graviton, gravitational space, light, heat), -1 (antigravitational particle).......;

The above-mentioned various scientific fields are called clustering sets in artificial intelligence, and they are expanded by unlabeled "concentric circles" with a common time series through the central zero point, feature mode, and unlabeled-circle logarithm.

It can correspond to the natural number sequence and the prime number sequence, so that the central zero point, circular probability, circular topology, fractal, and chaos become the unlabeled "concentric circle" sequence expansion of the graph neural network:

(5.2.1) $(1-\eta_{(D)}{}^2)^{K(Z\pm S\pm N)/t}=0$;

corresponding prime number sequence $\{X,D\}^{K(Z\pm S\pm N)/t}$

(5.2.2) $(1-\eta_{(N)}{}^{2})^{K\,(Z\pm S\pm N)/t}=0$;

corresponding to natural number sequence $\{10\}^{K\,(Z\pm S\pm N)/t}$

(5.2.3) $(1-\eta_{(p)}{}^{2})^{K\,(Z\pm S\pm N)/t}=0$;

corresponding prime number sequence $\{5\}^{K\,(Z\pm S\pm N)/t}$

(5.2.4) $(1-\eta^{2})^{K\,(Z\pm S\pm N)/t}\{10\}^{K\,(Z\pm S\pm N)/t}=\{1/2\}^{K\,(Z\pm S\pm N)/t}$;

corresponds to $\{5\}^{K\,(Z\pm S\pm N)/t}$; represents the zero point of the balance center;

Combined element mathematics is called n-dimensional equation, and high-order calculus reflects the internal weight of the element combination and changes in the external topological level; physics reflects the changes of element speed, momentum acceleration, kinetic energy, and energy orbit. The neural network reflects the analysis and cognitive process of the human brain. The logarithm of the circle reflects their common change rules, combining the macrocosm of physics and the quantum of the microcosm; the discrete statistics and entanglement analysis of mathematics, the evolution and decline of biology, the synthesis and decomposition of chemistry; through characteristic modules, logarithms of circles, and time series They are integrated together, or the unified rules of nature.

5.3. Logarithm of probability circle with relatively symmetric center $(1-\eta_H{}^{2})^{K\,(Z)/t}$

The logarithm of a circle has three "unitary norm invariance" and characteristic modes: it has a common time series through the "independent mathematical model", which can be converted into a corresponding traditional natural number or a custom time series, connecting and expanding the traditional computer into artificial intelligence Entity cognitive function.

(1)、$\{x_i\}^{K\,(Z\pm S\pm N\pm q)/t}=[(1-\eta_H)\cdot(1+\eta_H)]^{K\,(Z\pm S\pm N\pm q)/t}\{10\}^{K\,(Z\pm S\pm N\pm q)/t}$;

(2)、$\{x_i\}^{K\,(Z\pm S\pm N\pm q)/t}=[(1-\eta_H)\cdot(1+\eta_H)]^{K\,(Z\pm S\pm N\pm q)/t}\{5\}^{K\,(Z\pm S\pm N\pm q)/t}$;

(3)、$\{x_i\}^{K\,(Z\pm S\pm N\pm q)/t}=[(1-\eta_H)\cdot(1+\eta_H)]^{K\,(Z\pm S\pm N\pm q)/t}\{P_0\}^{K\,(Z\pm S\pm N\pm q)/t}$;

(4)、$\{x_i\}^{K\,(Z\pm S\pm N\pm q)/t}=[(1-\eta_H)\cdot(1+\eta_H)]^{K\,(Z\pm S\pm N\pm q)/t}\{D_0\}^{K\,(Z\pm S\pm N\pm q)/t}$;

Among them: $(1-\eta_H{}^{2})=1$ and $\sum_{(i=+S)}(+\eta_H{}^{2})=\sum_{(i=-S)}(-\eta_H{}^{2})$ reflects the boundary and level of natural number combination (including random combination, irrational number, etc.), The relative symmetry of the center zero point.

5.4. Chip architecture (AI) and logarithm of probability circle $(1-\eta_H{}^{2})^{K\,(Z)/t}$

Table 1. Logarithm of unlabeled probability circle

Θ Table 1. Chip architecture (A) and logarithm of probability circle $(1\pm\eta_H)^K\cdot(1\pm\eta_\omega)^K=\{0 or 1\}$;（K=+1,0,-1）; Features: maintain the invariance of the cluster set hierarchy, nature, and entity probability $(1-\eta_H{}^{2})^{K\,(Z)/t}=1$;										
	0.1	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**
0.1	$(1\pm\eta_{11})^K$	$(1+\eta_{12})^K$	$(1+\eta_{13})^K$	$(1+\eta_{14})^K$	$(1+\eta_{15})^K$	$(1+\eta_{16})^K$	$(1+\eta_{17})^K$	$(1+\eta_{18})^K$	$(1+\eta_{19})^K$	1
0.2	$(1-\eta_{21})^K$	$(1\pm\eta_{22})^K$	$(1+\eta_{23})^K$	$(1+\eta_{24})^K$	$(1+\eta_{25})^K$	$(1+\eta_{26})^K$	$(1+\eta_{27})^K$	$(1+\eta_{28})^K$	$(1+\eta_{29})^K$	1
0.3	$(1-\eta_{31})^K$	$(1-\eta_{32})^K$	$(1\pm\eta_{33})^K$	$(1+\eta_{34})^K$	$(1+\eta_{35})^K$	$(1+\eta_{36})^K$	$(1+\eta_{37})^K$	$(1+\eta_{38})^K$	$(1+\eta_{39})^K$	1
0.4	$(1-\eta_{41})^K$	$(1-\eta_{42})^K$	$(1-\eta_{43})^K$	$(1\pm\eta_{44})^K$	$(1+\eta_{45})^K$	$(1+\eta_{46})^K$	$(1+\eta_{47})^K$	$(1+\eta_{48})^K$	$(1+\eta_{49})^K$	1
0.5	$(1-\eta_{51})^K$	$(1-\eta_{52})^K$	$(1-\eta_{53})^K$	$(1-\eta_{54})^K$	$(1\pm\eta_{55})^K$	$(1+\eta_{56})^K$	$(1+\eta_{57})^K$	$(1+\eta_{58})^K$	$(1+\eta_{59})^K$	1
0.6	$(1-\eta_{61})^K$	$(1-\eta_{62})^K$	$(1-\eta_{63})^K$	$(1-\eta_{64})^K$	$(1\pm\eta_{65})^K$	$(1\pm\eta_{66})^K$	$(1+\eta_{67})^K$	$(1+\eta_{68})^K$	$(1+\eta_{69})^K$	1
0.7	$(1-\eta_{71})^K$	$(1-\eta_{72})^K$	$(1-\eta_{73})^K$	$(1-\eta_{74})^K$	$(1\pm\eta_{75})^K$	$(1+\eta_{76})^K$	$(1\pm\eta_{77})^K$	$(1+\eta_{78})^K$	$(1+\eta_{79})^K$	1
0.8	$(1-\eta_{81})^K$	$(1-\eta_{82})^K$	$(1-\eta_{83})^K$	$(1-\eta_{84})^K$	$(1\pm\eta_{85})^K$	$(1+\eta_{86})^K$	$(1+\eta_{87})^K$	$(1\pm\eta_{88})^K$	$(1+\eta_{89})^K$	1
0.9	$(1-\eta_{91})^K$	$(1-\eta_{92})^K$	$(1-\eta_{93})^K$	$(1-\eta_{94})^K$	$(1-\eta_{95})^K$	$(1-\eta_{96})^K$	$(1-\eta_{97})^K$	$(1-\eta_{98})^K$	$(1\pm\eta_{99})^K$	1

Explanation: $(1\pm\eta_{99})^K$ q={0↔10}represents the zero point of the topological center, and the logarithmic value of the regularized circle is the largest. Satisfaction: The relative symmetry invariance of the center zero point $\sum_{(i=-s)}(-\eta_H)+\sum_{(i=+s)}(+\eta_H)=0$;

The logarithm of the probability circle $(1\pm\eta_{ijk})^{K\,(Z)/t}=\{10\}^{K\,(Z)/t}$ converted into the logarithm $(1\pm\eta_{ijk})^{K\,(Z)/t}=\{10\}^{K\,(Z)/t}$ corresponding to the characteristic mode.

{q}Customized base q={0,1,2⋯} converted into "irrelevant mathematical model" probability numerical circle $(1\pm\eta_{ijk})^{K\,(Z)/t}=\{D_0\}^{K\,(Z)/t}$ Corresponding feature mode.

{N} represents the logarithmic factor of the probability circle of the real number value; calculus, level, number of digits N=(+1,0,-1) calculus order (N=0,1,2,...natural number);

Time series K (Z)/t=K (Z±S±Q±M±N±q)/t

5.5. The logarithm of the topological circle of the center zero point $(1-\eta^{2})^{K\,(Z)/t}$:

Table 2. Logarithm of unlabeled topological circle $(1\pm\eta)^K$ - $(1\pm\eta_\omega)^K$={0 to 1};

	0.1	0.2	0.3	0.4	<u>0.5</u>	0.6	0.7	0.8	0.9	1
0.1	$(1-\eta_{01}^2)^K$	$(1-\eta_{02}^2)^K$	$(1-\eta_{03}^2)^K$	$(1-\eta_{04}^2)^K$	$(1\pm\eta_{05}^2)^K$	$(1-\eta_{06}^2)^K$	$(1-\eta_{07}^2)^K$	$(1-\eta_{08}^2)^K$	$(1-\eta_{09}^2)^K$	$(1-\eta_{10}^2)^K$
0.2	$(1-\eta_{11}^2)^K$	$(1-\eta_{12}^2)^K$	$(1-\eta_{13}^2)^K$	$(1-\eta_{14}^2)^K$	$(1\pm\eta_{15}^2)^K$	$(1-\eta_{16}^2)^K$	$(1-\eta_{17}^2)^K$	$(1-\eta_{18}^2)^K$	$(1-\eta_{19}^2)^K$	$(1-\eta_{20}^2)^K$
0.3	$(1-\eta_{21}^2)^K$	$(1-\eta_{22}^2)^K$	$(1-\eta_{23}^2)^K$	$(1-\eta_{24}^2)^K$	$(1\pm\eta_{25}^2)^K$	$(1-\eta_{26}^2)^K$	$(1-\eta_{27}^2)^K$	$(1-\eta_{28}^2)^K$	$(1-\eta_{29}^2)^K$	$(1-\eta_{30}^2)^K$
0.4	$(1-\eta_{31}^2)^K$	$(1-\eta_{32}^2)^K$	$(1-\eta_{33}^2)^K$	$(1-\eta_{34}^2)^K$	$(1\pm\eta_{35}^2)^K$	$(1-\eta_{36}^2)^K$	$(1-\eta_{37}^2)^K$	$(1-\eta_{38}^2)^K$	$(1-\eta_{39}^2)^K$	$(1-\eta_{40}^2)^K$
0.5	$(1-\eta_{41}^2)^K$	$(1-\eta_{42}^2)^K$	$(1-\eta_{43}^2)^K$	$(1-\eta_{44}^2)^K$	$(1\pm\eta_{45}^2)^K$	$(1-\eta_{46}^2)^K$	$(1-\eta_{47}^2)^K$	$(1-\eta_{48}^2)^K$	$(1-\eta_{49}^2)^K$	$(1-\eta_{50}^2)^K$
0.6	$(1-\eta_{51}^2)^K$	$(1-\eta_{52}^2)^K$	$(1-\eta_{53}^2)^K$	$(1-\eta_{54}^2)^K$	$(1\pm\eta_{55}^2)^K$	$(1-\eta_{56}^2)^K$	$(1-\eta_{57}^2)^K$	$(1-\eta_{58}^2)^K$	$(1-\eta_{59}^2)^K$	$(1-\eta_{60}^2)^K$
0.7	$(1-\eta_{61}^2)^K$	$(1-\eta_{62}^2)^K$	$(1-\eta_{63}^2)^K$	$(1-\eta_{64}^2)^K$	$(1\pm\eta_{65}^2)^K$	$(1-\eta_{66}^2)^K$	$(1-\eta_{67}^2)^K$	$(1-\eta_{68}^2)^K$	$(1-\eta_{69}^2)^K$	$(1-\eta_{70}^2)^K$
0.8	$(1-\eta_{71}^2)^K$	$(1-\eta_{72}^2)^K$	$(1-\eta_{73}^2)^K$	$(1-\eta_{74}^2)^K$	$(1\pm\eta_{75}^2)^K$	$(1-\eta_{76}^2)^K$	$(1-\eta_{77}^2)^K$	$(1-\eta_{78}^2)^K$	$(1-\eta_{79}^2)^K$	$(1-\eta_{80}^2)^K$
0.9	$(1-\eta_{81}^2)^K$	$(1-\eta_{82}^2)^K$	$(1-\eta_{83}^2)^K$	$(1-\eta_{84}^2)^K$	$(1\pm\eta_{85}^2)^K$	$(1-\eta_{86}^2)^K$	$(1-\eta_{87}^2)^K$	$(1-\eta_{88}^2)^K$	$(1-\eta_{89}^2)^K$	$(1-\eta_{90}^2)^K$
1.0	$(1-\eta_{91}^2)^K$	$(1-\eta_{92}^2)^K$	$(1-\eta_{93}^2)^K$	$(1-\eta_{94}^2)^K$	$(1\pm\eta_{95}^2)^K$	$(1-\eta_{96}^2)^K$	$(1-\eta_{97}^2)^K$	$(1-\eta_{98}^2)^K$	$(1-\eta_{99}^2)^K$	$(1-\eta_{100}^2)^K$

Description: $(1\pm\eta_{95}^2)$ indicates the zero point of the center of symmetry

(A), the decimal q={0↔10} is converted to the logarithm of the topological circle of the "independent mathematical model".

(B), the combination of q elements q={0,1,2,3...natural number} is converted to the logarithm of the topological circle of the "independent mathematical model".

(C), $w_{ij}=(1-\eta_{ji}^2)^{K(Z\pm(M=i))\pm(S\pm j)\pm((S\pm 1)N+i)\pm\cdots\pm(1N+i)\pm(q+j)/t}\bullet\{D_0\}^{K(Z)/t}$;

Among them: (M=i) represents the accuracy of topological circle logarithm calculation. For example, 10 elements $(1-\eta_{jik}^2)^{K(Z\pm(M=i)}$ are multiples of $\{10_{jik}^2\}^{KM}$; M=1,2,3,...natural numbers;

5.6. Time series of logarithm of unlabeled circle K (Z±S±Q±M±N±q)/t

The eigenmodes and logarithms of the high-parallel multi-media state have isomorphic time series. In addition to time series, it can also describe area, number of bits, combination status, and custom series. They can all be consistent with the sequence of natural numbers, which can be substituted to increase publicity and confidentiality.

Table 3. Power function K (Z±S±*M*±*N*±*q*)/t

$(1-\eta_{jik}^2)^{K(Z)/t}=(1-\eta_{jik}^2)^{K(Z\pm S\pm M\pm N\pm q)/t}$; (η_{jik}) represents the real number of the circle log; the power function represents the rotation N=2πn and Moving axis direction.

(A), natural number topological circle logarithm $(1-\eta_{ijk})^{K(Z)/t}=\mathbf{\{10^2\}}^{\pm(Z\pm(M=i))\pm(S\pm j)\pm((S\pm 1)N+i)\pm\cdots\pm(1N+i)\pm(q+j)/t}$; Corresponding to the characteristic mode $\{10\}^{K(Z)/t}$.

Define the power function: (K) function property; (Z) point infinite number; (M) area; (N) digit; (q+j) random single digit

(B), equation topological circle logarithm $\mathbf{(1-\eta_{ijk})^{K(Z)/t}=\{10^2\}^{\pm(Z\pm(M=i))\pm(S\pm j)\pm((S\pm 1)N+i)\pm\cdots\pm(1N+i)\pm(q+j)/t}}$;; Corresponding to the characteristic mode $\{D_0\}^{K(Z)/}$t.

Define the power function: (K) function property; (Z) point infinite element; (M) area; (N) calculus or level; (q) element combination number

(C), q={0↔10} is converted into the topological circle logarithm of "independent mathematical specific model", which reflects the accurate calculation of the power function of the circle logarithm.

In this way, the novel computer chip will expand from the traditional $\{2\}^{K(Z\pm M\pm S\pm N\pm q)/t}$ occupying a two-dimensional large base area to $\{10\}^{K(Z\pm M\pm S\pm N\pm q)/t}$ or a small base area in the high-dimensional space The program algorithm and chip structure of the integration of core and screen. It has the advantages of large capacity, high efficiency, simplified and unified procedures, good performance, and ensuring the openness, privacy, security and stability of data.

6. Exploration and application of circle logarithm of neural network

Neural network characteristics, the combination level of each element of the cluster set, there are individual and individual, group and group, group and individual interactions within the level, and there are separate rules for the regularization coefficient (number of combinations) that are not repeated combinations. In other words, the number of combinations in the hierarchy can only be reduced, not increased, and it does not affect the distribution of combination coefficients.

In September 2020, Academician Zhang Bo of Tsinghua University in China Science: Information Science "Towards the Third Generation of Artificial Intelligence" systematically introduced the establishment and development of artificial intelligence and pointed out the trend of the third generation of artificial intelligence. Description of his work: The use of Bayesian neural network to establish a "three-element confrontation network-respectively a fusion of classifiers, generators, discriminators", through unsupervised learning, the generator (network) can learn the representation of sample objects (I.e. prior knowledge), and at the same time use this prior knowledge to improve the classifier function and recognition rate through the unsupervised learning of ANN. Called "Integration of Three Spaces".

The author proposes the "circle logarithmic graph algorithm". The work description: improve the Bayesian neural network, establish an integrated relative symmetry including the central zero point, the logarithm of the unit probability circle, the logarithm of the combined topological circle, and the common time series, find the truly effective function and have robustness The characteristic model and the unlabeled circle logarithm are infinitely expanded between [0 to 1], and the circle logarithm analysis, reasoning and recognition of "no specific content, unsupervised learning" are realized in a "concentric space". know. It not only has the maximum brain working mechanism, but also makes full use of the combination of computer computing power. It is called "concentric space".

In order to carry out the discussion of "the third generation of artificial intelligence?" proposed by Academician Zhang Bo. By comparing the difference between the two spaces of "Fusion of Three Spaces" and "Concentric Circle Space", referring to the article which gives examples of the connection between natural language, image, voice and algorithm, the algorithm and ideas of circle logarithm map, as well as the circle logarithm Multi-media (natural text, audio, image) and other common time series are synchronously expanded to establish interpretability to deal with the problem of data characteristic model space and human semantic space.

6.1. Time series issues:

The classifier mentioned in the fusion of three spaces converts knowledge into symbols and specifies semantics. For example, natural characters are regulated by knowledge and semantics. Solve the problem of the probability distribution of clustering knowledge and semantic regions and levels, and create conditions for the establishment of feature models.

Under the global full circle and fully enclosed clustering cluster, the knowledge conversion symbol and the symbol conversion data:

$$(6.1.1)\qquad (1/C_{(S\pm Q\pm M\pm N\pm q))})^{K}\{x_{j1\omega1}r_1\}^{K(Z\pm S\pm Q\pm M\pm N\pm q)/t} \in \{X_0\Omega_0R_0\}^{K(Z\pm S\pm Q\pm M\pm N\pm q)/t}$$

Such as natural text, words, sentences, paragraphs, chapters, these symbols, through the Bayesian neural network probability and ANN unsupervised learning to improve the recognition rate of the separator, and solve the contradiction between "detection (where)" and recognition (what) contradiction. How to make them connect with each other? Knowledge and semantics of circle logarithms: characters (q), words (N), sentences (M), paragraphs (Q), chapters (S)... infinity (Z) form a time series. Establish discrete logarithmic time series $K(Z)/t=K(S\pm Q\pm M\pm N\pm q)/t$;

For example, neural network circle logarithm knowledge and semantics: axons (q), axons (N), dendrites (M), nuclei (Q), cell bodies (S)... infinite (Z) form a time series. Establish entangled circle logarithmic time series $K(Z)/t=K(Z\pm S\pm Q\pm M\pm N\pm q)$;

(a), Bayesian neural network probability: usually expressed as a vector [1]p1290

$$(6.1.2)\qquad P(C|W;\theta)=e^{v}{}_{c}{}^{u}{}_{w}/\sum c'\in c e^{v}c'^{w},$$

Where w is the given target word, c is a sum word arbitrarily selected from the birth text, the parameters θ, evc, uw, $w\in W$;

$\mathbf{C_i}\in\mathbf{C}$; $i=1,2,3,\dots,d$, a total of $|\mathbf{C_I}\times\mathbf{W}|\times\mathbf{d}$ maximum vector representation.

(b) Probability of circular logarithmic neural network: the unknown quantity is expressed as a scalar $\{x_1x_2x_3\dots x_q\}^{K(Z)/t}\in\{X\}^{K(Z)/t}$; (within distance) weight $\{\omega_1,\omega_2,\omega_3,\dots,\Omega_q\}^{K(Z)/t}\in\{\Omega\}^{K(Z)/t}$; (out of distance) weight, called orbit $\{r_1,r_2,r_3,\dots,r_q\}^{K(Z)/t}\in\{R\}^{K(Z)/t}$; the unit cluster element composed of $F(\cdot)^{K(Z)/t}=\sum(i=c,w)\{X_{jik}\omega_{jik}r$

$$(6.1.3)\qquad (1-\eta_H{}^2)^{K(Z)/t}=[\{X_{jik}\omega_{jik}r_{jik}\}/\sum_{(i=c,w)}\{X_{jik}\omega_{jik}r_{jik}\}]^{K(Z)/t};$$

Among them: $\{X_{jik}\omega_{jik}r_{jik}\}$ represents the distribution probability of each element in the cluster set; $\sum(i=c,w)\{X_{jik}\omega_{jik}r_{jik}\}$ represents the distribution probability of the overall cluster set element.

6.2. Probabilistic symmetry and asymmetric perceptrons of circular logarithmic neural networks:

In the probability distribution of cluster set elements, there are a lot of problems of symmetry and asymmetry. Bayesian neural network probability and logarithmic probability solve classification problems, but cannot solve the problem of asymmetry analysis of human consciousness.

(a). Pattern recognition proposes symmetry vector interface analysis. Specifically, the cluster set elements are mapped to the fixed two-dimensional space of the coordinate center, and then the interface line is rotated to generate the parameter θ. The parameter θ is not easy to find, and there are many algorithm.

(b) The idea of the central zero point is proposed for the logarithmic unit probability of a circle. From the overall point of view, the cluster set elements are mapped to a closed two-dimensional plane circle or three-dimensional spherical space. The geometric center point or arithmetic mean of the circle is called the "center zero point". Each sub-type cluster forms (within distance) weights and (distance outside) orbits. The asymmetry is expressed by the logarithm of the unit circle (1-ηω2)K (Z)/t, and the asymmetry is converted into relative symmetry. Ensure the stability of the center zero point. (i=c,w)∈K (Z)/t;

(6.2.1) $(1-\eta_\omega^2)^{K(Z)/t}=[\sum_{(i=c,w)}\{X_{jik}\omega_{jik}r_{jki}\}/\sum_{(i=c,w)}(1/C_{(i=c,w)})\{X_{jik}\omega_{jik}r_{jik}\}]^{K(Z)/t}$
$=[\sum_{(i=c,w)}\{X_{ji}\}/\sum_{(i=c,w)}(1/C_{(i=c,w)})\{X_{ji}\}]^{K(Z)/t}$
$=[\sum_{(i=c,w)}\{\omega_{ji}\}/\sum_{(i=c,w)}(1/C_{(i=c,w)})\{\omega_{ji}\}]^{K(Z)/t}$
$=[\sum_{(i=c,w)}\{r_{ji}\}/\sum_{(i=c,w)}(1/C_{(i=c,w)})\{_i r_{ji}\}]^{K(Z)/t}$;

(6.2.2) $(1-\eta_\omega^2)^{K(Z)/t}=(1-\eta_\omega^2)^{+(Z)/t}+(1-\eta_\omega^2)^{0(Z)/t}+(1-\eta_\omega^2)^{-(Z)/t}=\{0 \text{ or } 1\}$;

(6.2.3) $(1-\eta_\omega^2)^{K(Z)/t}=(1-\eta_\omega^2)^{+(Z)/t}+(1-\eta_\omega^2)^{-(Z)/t}=\{0 \text{ or } 1\}$;

(6.2.4) $\sum_{(i=c,w)}(+\eta_\omega)^{+(Z)/t}=\sum_{(i=c,w)}(-\eta_\omega)^{+(Z)/t}$;

Formula (6.2.1)-(6.2.4) means

(1) The relative symmetry of the center zero point, which can maintain the geometric position and algebraic value of the center zero point of the element characteristic., Cluster set elements are distributed, the elements in each level have the consistency of coordinated changes. Therefore, the cluster set grasps the typical cluster set elements to derive and predict the laws of other elements.

(2) The spherical surface is moved to the zero point of the center of the circle through the logarithm of the circle, and the vector problem is converted into a scalar linear problem, which is a scientific way to ensure the accuracy of the analysis of the inner and outer distances (weights, orbits) of concentric circles.

6.3. Probability and topology combination perceptron problems of circular logarithmic neural network:

There are various non-repetitive combination problems in the combination of clustering elements. Under fully enclosed conditions, the combined elements can be reduced, but the robustness cannot be increased. Bayesian neural network probability and logarithmic probability solve classification problems, but cannot solve the combined reasoning analysis of human consciousness.

(c). Pattern recognition proposes vector interface analysis of combined topology. Specifically, the cluster set elements are mapped to a fixed two-dimensional space with the origin of the coordinate center, and then the interface line is rotated to generate the parameter θ. The parameter θ is not easy to find, and there are many algorithm.

(d) The idea of the central zero point is proposed in the circular logarithmic unit combination topology. From the overall point of view, the various combinations of cluster set elements are mapped to a closed two-dimensional plane circle or three-dimensional spherical space. The geometric center point or arithmetic mean of the circle is called the "center zero point". Each sub-type cluster forms a weight (within the distance) and a topological orbit (outside the distance), expressed as the logarithm of the topological circle $(1-\eta^2)^{K(Z)/t}$, which transforms the mutual influence and entangled elements into breakthroughs. Ensure the stability of the center zero point.

(6.3.1) $(1-\eta_T^2)^{K(Z)/t}=[\sum_{(i=S)}(1/C_{(i=c,w)})\prod_{(i=c,w)}\{X_{jik}\omega_{jik}r_{jik}\}/\{X_{0jik}\omega_{0jik}r_{0jik}\}]^{K(Z)/t}$
$=[\sum_{(i=c,w)}(1/C_{(i=c,w)})^K\prod_{(i=c,w)}\{X_{jik}\}/\{X_{0jik}\}]^{K(Z)/t}$
$=[\sum_{(i=c,w)}(1/C_{(i=c,w)})^K\prod_{(i=c,w)}\{\omega_{jik}\}/\{\omega_{0jik}\}]^{K(Z)/t}$
$=[\sum_{(i=c,w)}(1/C_{(i=c,w)})^K\prod_{(i=c,w)}\{r_{jik}\}/\{r_{0jik}\}]^{K(Z)/t}$;

(6.3.2) $(1-\eta_T^2)^{K(Z)/t}=(1-\eta_T^2)^{+(Z)/t}+(1-\eta_T^2)^{0(Z)/t}+(1-\eta_T^2)^{-(Z)/t}=\{0 \text{ or } 1\}^{K(Z)/t}$;

(6.3.3) $(1-\eta_T^2)^{K(Z)/t}=(1-\eta_T^2)^{+(Z)/t}+(1-\eta_T^2)^{-(Z)/t}=\{0 \text{ or } 1\}^{K(Z)/t}$;

(6.3.4) $\sum_{(i=c,w)}(+\eta_T)^{+(Z)/t}+\sum_{(i=c,w)}(-\eta_T)^{+(Z)/t}$;
(6.3.5) $\sum_{(i=c,w)}(+\eta_T)^{+(Z)/t}+\sum_{(i=c,w)}(-\eta_T)^{0(Z)/t}+\sum_{(i=c,w)}(-\eta_T)^{+(Z)/t}=\{0 \text{ or } 1\}^{K(Z)/t}$;

Formula (6.3.1)-(6.3.5) means

(3) The center zero point is isomorphic topological, with the geometric topological position of the center zero point of the element characteristic and the algebraic combination value. In the entangled calculation of the neural network, the elements of the cluster set have the consistency of coordinated changes in each combined topology level. Therefore, the discriminator can derive and predict the laws of other elements by grasping the typical cluster set elements in the topology.

(4) The isomorphic topological properties of the central zero point $(1-\eta_T^2)^{K(Z)/t}$ and the relative symmetric probability of the central zero point $(1-\eta_\omega^2)^{K(Z)/t}$ have the same form but different connotations. Topology represents the level of combined action (orbits, kinetic energy, force from outside points); relative symmetric probability represents the level of action (weights of points inside distance, momentum)

(5) The spherical surface is moved to the zero point of the center of the circle through the logarithm of the circle, and the vector combination topology problem is converted into a scalar linear problem, and a scientific method to ensure the accuracy of the analysis and cognition of the inner and outer distances (weights, orbits) of concentric circles.

6.4. Compression and normalization of circular logarithmic neural network:

The circle logarithm map algorithm greatly embraces the linear and nonlinear combination problems of any function. Through the mathematical proof of isomorphism, the characteristic modulus and circle logarithm of various combinations in the fully enclosed clustering set can be compressed and returned The concentric circles transformed into linear become an infinite expansion in the {0 to1} vortex structure of unsupervised learning.

(6.4.1) $(1-\eta^2)^{K(Z)/t}=[\sum_{(i=S)}\prod_{(i=c,w)}\{X_{jik}\,\omega_{jik}\,r_{jik}\}]^{K(Z)/t}$
$=[\sum_{(i=c,w)}\boldsymbol{f}_c(1/S_{(i=c,w)})^K\{X_{jik}\,\omega_{jik}\,r_{jik}\}]^{K(Z)/t}$
(6.4.2) $(1-\eta^2)^{K(Z)/t}=\!\!\longrightarrow\sum_{(i=c,w)}[(1/S_{(i=c,w)})^K\{X_{jik}\,\omega_{jik}\,r_{jik}\}]^{K(1)/t}$;

The "=→" in formula (6.4.1) represents the proof and processing of the compression and normalization of the logarithm of the circle. "$\boldsymbol{f}$**c**" means the number of times the elements in the combination are repeated in a non-repetitive combination. The isomorphism "P=NP complete problem" is proved to be $\boldsymbol{f}$**c** /(1/S $_{(i=c,w)}$=1, which can be eliminated The isomorphism norm of circle logarithm remains unchanged, and the compression and normalization problem of circle logarithm neural network is realized.

To summarize the above, the circle logarithm map algorithm converts the classifier, perceptron, and discriminator into the relative symmetry of the logarithm of the probability circle, the logarithm of the topological circle, and the relative symmetry of the center zero, sharing a time series, forming a five-dimensional vortex structure network. On the contrary, reverse calculation, cognition, and thinking with the function of a discriminator can also be established to meet the characteristics of forward and reverse thinking of human thought. Many program algorithms are integrated. Such as neural network DNN/CNN//RNN and other 12 important dropot mathematics and visual interpretations, unified integration of regularization, Monte Carlo uncertainty and model compression, etc., are unified and integrated into the center zero point topology circle logarithm program. Such as loss function, cross high loss function, regularization method to prevent over-fitting, loss function Long Short Memory Neural Network (LSTN), Sinton's Deep Belief Network (DBN), etc., are unified and integrated into the program of the logarithm of the central zero point probability circle.

6.5. The problem of isomorphism and consistency in high-parallel multi-media states

Many "events" in nature include the rules of motion in the universe, the working mechanism of human brain thinking, mathematics-physics-biology-chemistry in the scientific field, and group theory-arithmetic-algebra-geometry in mathematical sciences, etc., all in high parallelism, Multi-domain entangled connection with interaction, and discrete connection with asymmetry.

For thousands of years, generations of scientists, mathematicians, and engineers have been exploring: can they all carry out activities under the rules of what kind of mathematical function and sharing a time series? It is hoped that a reliable machine can replace the thinking of calculation, analysis, cognition, and reasoning performed by human beings.

In the computer field, the high-parallel multi-media state is reflected in the high-parallel computing where many different clusters often appear for cluster sets. Such as the synchronous translation of natural speech; synchronization of language, text, images, communication passwords, automatic control, key codes, etc.; one machine automatically controls multiple machines; the privacy, robustness, security, and availability of bank passwords, etc. Interpretative cross-regional coordination and other issues. The core is how to make the various clusters have a unified time series to meet the synchronous expansion.

At present, the more well-known method is to extract the "one-to-one correspondence" of the big data knowledge base from different clustering elements, and the symbols represented by discrete symbols are converted into high-dimensional space feature vectors. After the application image is processed by the ResNet network, the feature of the res5c layer is taken as the output, and then the word vector is fused with the feature vector of the image output. Three spaces are used, that is, the fusion of dual spaces (algorithms) and single spaces (computing power). When the clustering sensory (visual and auditory) signals are upgraded to perception, symbols have a mathematical foundation, and symbolic reasoning has inherent semantics. Trying to solve the problem of interpretability and robustness of machine behavior, there are still complex computer programs. High stability, the degree of direct integration with engineering and other issues.

The clustering set in the computer is such a generalized high-parallel, multi-media state calculation of the circle logarithmic graph algorithm: global, fully enclosed clustering, hierarchy, and element-invariant views, extracting the big data knowledge base "one-to-one correspondence ", the symbol represented by the discrete symbol, after the application of the image is processed by the ResNet network, the features of the res5c layer are taken, and then the feature vector (function) is combined with the feature mode of the image output, and converted into the feature mode of the high-dimensional space (positive, The average value of the medium and inverse eigenfunctions) includes elements, weights, and orbits $\{x_{jik}\omega_{jik}\ r_{jik}\}$, which are output as unknown variables $\{X_{jik}\}$, and have a "separator" function. The eigenmodes are inversely mapped to the corresponding one-to-one correspondence through the principle of relativity comparison The logarithm of the circle is an irrelevant mathematical model, unsupervised learning, and label calculation. The process of analysis. At the same time, the entire work process can be reversed, with automatic identification, inspection, and correction functions.

Definition 6.5.1 Fully enclosed clustering dynamic (Z)/t, area (Z±Q)/t, area dimension K (Z±Q±M±S)/t, hierarchical calculus K (Z±Q±M±N)/t, cluster element combination K (Z±Q±M±S±N±q)/t; cluster element combination $q=\{x_{jik}$ (element), ω_{jik} (weight), r_{jik} (vector orbit)}; Sometimes mixed expressions in the formula, M_{jik} (representing vector), Ω_{jik} (representing scalar), R_{jik} (representing track, gradient).

Among them: plane coordinate r (vector track) = P (arc length) θ (plane angle)

Spherical coordinates r (vector orbit) = P (arc length) θ (longitude, plane angle) Φ (latitude, vertical angle).

Proof: Synchronous and consistent deployment of high-parallel multi-media states.

Suppose: clustering set: the regional level (Q) is expanded by the multi-media state (representing scalar) elements, there is a high parallel multi-media state (M) level, and its corresponding closed concept clustering element$\{M_{jik}\}=J\ (M_A),J\ (M_B),\cdots J\ (M_q),\cdots J\ (M_G)$ tree-like hierarchical composition, with parallel calculus, level (±N), element.

Triple combination of three elements of clustering set;

$$J\{M_{jik}\}^{K\ (Z\pm M)/t}=\{\sum_{(i=Q)}\prod_{(i=q)}(x_{Ajik}\ \omega_{Ajik}\ r_{Ajik})\}^{K\ (Z\pm Q\pm S\pm M\pm(MA)\pm N\pm q)/t}$$
$$J\ (M_A)^{K\ (Z\pm MA)/t}=\{\sum_{(i=A)}\prod_{(i=qA)}(x_{Ajik}\ \omega_{Ajik}\ r_{Ajik})\}^{K\ (Z\pm Q\pm S\pm M\pm(MA)\pm N\pm q)/t};$$
$$J\ (M_B)^{K\ (Z\pm MB)/t}=\{\sum_{(i=B)}\prod_{(i=qB)}(x_{Bjik}\ \omega_{Bjik}\ r_{Bjik})\}^{K\ (Z\pm Q\pm S\pm M\pm(MB)\pm N\pm q)/t};$$
$$\cdots;$$
$$J\ (M_G)^{K\ (Z\pm MG)/t}=\{\sum_{(i=G)}\prod_{(i=qG)}(x_{Gjik}\ \omega_{Gjik}\ r_{Gjik})\}^{K\ (Z\pm Q\pm S\pm M\pm(MG)\pm N\pm q)/t};$$

{M}±{q} level expansion:

$$\{q\}^{K\ (Z\pm Q\pm S\pm M\pm(MG)\pm N\pm q)/t}=(\pm q_{jik})=\{\sum_{(i=Q)}\prod_{(i=jik)}(x_{qjik}\ \omega_{qjik}\ r_{qjik})\}^{K\ (Z\pm Q\pm S\pm M\pm(MA)\pm N\pm q)/t};$$

Among them: $(J\ (M_G)^{K\ (Z\pm G)/t}$ indicates that the key, custom password, face recognition, bank password, image, text, terminal receiver, etc. are bundled with other multimedia states to become specific closed information Interpretability and robustness. It has high security, high resistance and high interference).

The idea here is

Forward, $\{M\}\to(\pm N)\to(\pm q)\to(\pm q_{jik})$, called decoder;

Reverse, $(\pm q_{jik})\to(\pm q)\to(\pm N)\to\{M\}$, called encoder;

Due to the reciprocity function, the encoder and decoder can be combined to automatically identify the program and save program space. Through the logarithm of the circle, the artificial intelligence (generator, perceptron, discriminator) of Tsinghua University's Zhang Bo's "three spaces" [1] "combines two into one" can be transformed into the unit space of circle logarithms, and enter the unrelated mathematical model. Labeled, unsupervised learning "new generation artificial intelligence".

6.6. Neural network clustering tree technology nodes and unlabeled hierarchical circle logarithm

The logarithm of the unlabeled circle corresponds to each cluster of the cluster set, the combination level of cluster elements, and the calculus are reflected as the function average, and the geometric space is concentric circles. Different levels of clustering, clustering element center zero points to establish unlabeled neural network clustering element nodes. Among them: the time series expresses the clusters of the cluster set, the combination level of cluster elements, the calculus is reflected as the function average, and the geometric space is concentric circles. Different levels of clustering and clustering element center zero points to establish neural network clustering element tree technology nodes.

Suppose: the cluster set is composed of "three elements (element-weight (distance inner point)-orbit (distance outer point)" $\{xm_{jik}\ \omega m_{jik}\ rm_{jik}\}^{K(Z\pm M)/t}$, forming a basic billion-level "triple", Called "nodes" in neural networks.

(1) The first level of M:$J\{M\}^{K(Z\pm M)/t}$; $\pm M=0,1,2,3\cdots$;

(6.6.1) $J\{M\}^{K(Z\pm M)/t}=\{xm_{jik}\ \omega m_{jik}\ rm_{jik}\}^{K(Z\pm M)/t}$

$=\{x_{Ajik}\ \omega_{Ajik}\ r_{Ajik)}^{K(Z\pm MA)/t},\ \{x_{Bjik}\ \omega_{Bjik}\ r_{Bjik)}^{K(Z\pm MB)/t}\cdots,\ x_{Gjik}\ \omega_{Gjik}\ r_{Gjik}^{K(ZG)/t}\}^{K(Z\pm MG)/t}$;

(6.6.2) $(1-\eta_{Ajik}{}^{2})^{K(Z\pm MA)/t}=(1-\eta_{Ajik}{}^{2})^{K(Z\pm MA\pm(N\pm q)A)/t}+(1-\eta_{Bjik}{}^{2})^{K(Z\pm MB\pm(N\pm q)B)/t}$

$+(1-\eta_{Ajik}{}^{2})^{K(Z\pm Q\pm S\pm MG\pm(N\pm q)G)/tt}+\cdots$;

(2) The second level of M: $J\{M_A\}^{K(Z\pm MA)/t}J\{M_B\}^{K(Z\pm MB)/t,}\cdots,\ J\{M_G\}^{K(Z\pm MG)/t}$;$M=0,1,2,3\cdots$; $\pm N=0,1,2,3\cdots$;

(6.6.3) $J\{M_A\}^{K(Z\pm M)/t}=\sum_{(i=A)}\{x_{Ajik}\ \omega_{Ajik}\ r_{Ajik}\}^{K(Z\pm Q\pm S\pm MA\pm N\pm qA)/t}$

$=\{x_{Ajik}\ \omega_{Ajik}\ r_{Ajik}\}^{K(Z\pm MA\pm 0\pm qA)/t}+\{x_{Ajik}\ \omega_{Ajik}\ r_{Ajik}\}^{K(Z\pm MA\pm 1\pm qA)/t}+\{x_{Ajik}\ \omega_{Ajik}\ r_{Ajik}\}^{K(Z\pm MA\pm 2\pm qA)/t}$

(6.6.4) $(1-\eta_{jik}{}^{2})^{K(Z\pm M)/t}=(1-\eta_{Ajik}{}^{2})^{K(Z\pm Q\pm S\pm MA\pm 0\pm qA)/t}+(1-\eta_{Bjik}{}^{2})^{K(Z\pm Q\pm S\pm MB\pm N\pm qB)/t}+$

$\pm(1-\eta_{gjik}{}^{2})^{K(Z\pm Q\pm S\pm MG\pm N\pm qG)/t}$;

(6.6.5) $J\{M_B\}^{K(Z\pm M)/t}=\sum_{(i=B)}\{x_{Bjik}\omega_{Bjik}r_{Bjik}\}^{K(Z\pm Q\pm S\pm MB\pm N\pm qB)/t}$

$=\{x_{Bjik}\ \omega_{Ajik}\ r_{Bjik}\}^{K(Z\pm MB\pm 0\pm qB)/t}+\{x_{Bjik}\ \omega_{Bjik}\ r_{Bjik}\}^{K(Z\pm MB\pm 1\pm qB)/t}+\{x_{Bjik}\ \omega_{Bjik}\ r_{Bjik}\}^{K(Z\pm MB\pm 2\pm qB)/t}$;

$\cdots\cdots$,

(6.6.6) $J\{M_G\}^{K(Z\pm M)/t}=\sum_{(i=G)}\{x_{Gjik}\omega_{Gjik}r_{Gjik}\}^{K(Z\pm Q\pm S\pm MG\pm N\pm qG)/t}$

$=\{x_{Gjik}\ \omega_{Gjik}\ r_{Gjik}\}^{K(Z\pm MG\pm 0\pm qG)/t}+\{x_{Gjik}\ \omega_{Gjik}\ r_{Gjik}\}^{K(Z\pm MG\pm 1\pm qG)/t}+\{x_{Gjik}\ \omega_{Gjik}\ r_{Gjik}\}^{K(Z\pm MG\pm 2\pm qG)/t}$;

(3) The qth level of M_q:$J\{M_{qA}\}^{K(ZMA\pm q)/t}J\{M_{qB}\}^{K(ZMA\pm q)/t,}\cdots,\ J\{M_{qG}\}^{K(ZMA\pm q)/t}$;$\pm q_{jik}=1,2,3$;

(6.6.7) $J\{M\}^{K(Z\pm Mq)/t}=\{x_{mjik}\omega_{mjik}r_{mjik}\}^{K(Z\pm Mq)/t}$

$=x_{Bjik}\ \omega_{Bjik}\ r_{Bjik}{}^{K(Z\pm Mq)/t},\ \cdots,\ x_{Gjik}\ \omega_{Gjik}\ r_{Gjik}{}^{K(Z\pm Mq)/t}\}^{K(Z\pm Q\pm S\pm M\pm N\pm q)/t}$;

(4) The expansion of the level and calculus $(1-\eta_{gjik}{}^{2})^{K(Z\pm Mq\pm N\pm qjik)/t}$; $\pm N=0,1,2,$

(6.6.8) $(1-\eta_{gjik}{}^{2})^{K(Z\pm Mq\pm N\pm qjik)/t}=\pm(1-\eta_{gjik}{}^{2})^{K(Z\pm Q\pm S\pm MG\pm N\pm qjik)/t}=\pm(1-\eta_{gjik}{}^{2})^{K(Z\pm Q\pm S\pm Mq\pm 0\pm qjik)/t}$

$\pm(1-\eta_{gjik}{}^{2})^{K(Z\pm Q\pm S\pm Mq\pm 1\pm qjik)/t}\pm(1-\eta_{gjik}{}^{2})^{K(Z\pm Q\pm S\pm Mq\pm 2\pm qjik)/t}+\cdots$;

(5) Time series of M: $K(Z)/t=K(Z\pm Q\pm S\pm M_G\pm N\pm q_{jik})/t$;

Characteristic mode$\{D_0\}^{K(Z\pm Q\pm S\pm MG\pm N\pm qjik)/t}$;

Logarithm of the mapped circle $(1-\eta_{gjik}{}^{2})^{K(Z\pm Q\pm S\pm MG\pm N\pm qjik)/t;}$

Combination coefficient $(1/C_{(Z\pm Q\pm S\pm MG\pm N\pm qjik)})^{K}$

The combined form of quantum spin + radiation $\{0,2\}^{K(Z\pm Q\pm S\pm MG\pm N\pm qjik)/t}$;

6.7. The relationship between clustering elements, unknown variables, observation functions, and expectation functions

Through pattern recognition, they are mixed together such as language, image, audio and video, custom password, etc., and converted into symbols by using discrete knowledge base. When the big circle contains all clusters and cluster elements (function average), it is classified by classifier Levels and elements are converted into numbers and mathematics, and then converted into functions (combination of element values) $J\{M\}^{K(Z)/t}$;

Neural network element values are often functions of unknown variables, known variables (observation) functions, and expectation (prior) functions can be inverted Calculation. The formulas (6.7.1)-(6.7.6) show that the nodes of the neural network clustering element tree technique are expanded into a circle logarithmic graph.

(1) Function of unknown variables: $\{q\}^{K(ZM)/t}=\{X\}^{K(Z\pm M)/t}=\sum_{(i=s)}\prod_{(i=p)}\{x_{mjik}\omega_{mjik}r_{mjik}\}^{K(Z\pm M)/t}$

(2) Function of known variables: $D=\sum_{(i=s)}(1/C_{(Z\pm Q\pm S\pm M\pm N\pm q)})^{K}\prod_{(i=p)}\{x_{mjik}\omega_{mjik}r_{mjik}\}^{K(Z\pm M)/t}$;

(3) The first combination coefficient of the calculus polynomial of finite combination $(1/C_{(Z\pm Q\pm S\pm M\pm N\pm q)})^{k}=1$;

(6.7.1) $({}^{K\,(St}\sqrt{D})^{K\,(ZM)/t}=\{{}^{K\,(St}\sqrt{\prod_{(i=p)}}(x_{mjik}\omega_{mjik}r_{mjik})\}^{K\,(Z\pm M)/t}$

is called the first sample mod $\{X_0\}^{K\,(1)/t}$

(**4**) Expectation (a priori) function:

(6.7.2) $\{D_0\}^{K\,(ZM)/t}=\sum_{(i=s)}(1/C_{(i=(Z\pm Q\pm S\pm M\pm N\pm q))})^K\prod_{(i=p)}\{x_{mjik}\omega_{mjik}r_{mjik}\}^{K\,(Z\pm M)/t}\{x_{mjik}\omega_{mjik}r_{mjik}\}^{K\,(Z\pm M)/t}$

The second combination coefficient of the calculus polynomial of finite combination $(1/C_{(Z\pm Q\pm S\pm M\pm N\pm q)})^K=(1/S_M)$;

(6.7.3) $(D_0)^{K\,(ZM)/t}=\sum_{(i=s)}(1/S_M)\{(x_{mjik}\omega_{mjik}r_{mjik})\}^{K\,(Z\pm M)/t}\{(xmjik\omega mjikrmjik)\}^{K\,(Z\pm M)/t}$ is called the second sample model $\{D_0\}^{K\,(1)/t}$;

(**5**), time series integer expansion

(6.7.4) $\{X\}^{K\,(Z\pm M)/t}/\{X_0\}^{K\,(Z\pm M)/t}=\{X_0\}^{K\,(Z\pm M)/t}/\{D_0\}^{K\,(Z\pm M)/t}=K\,(Z\pm Q\pm S\pm M\pm N\pm q)/t$;

(**6**) Unsupervised learning or unlabeled logarithm

(6.7.5) $(1-\eta_{Mjik}{}^2)^{K\,(Z\pm M)/t}=\{X\}^{K\,(Z\pm M)/t}/\{X_0\}^{K\,(Z\pm M)/t}=\{X_0\}^{K\,(Z\pm M)/t}/\{D_0\}^{K\,(Z\pm M)/t}$;

(**7**), unsupervised learning or unlabeled computer programs

(6.7.6) Input $\{X_0\}^{K\,(Z\pm M)/t}$ and output $\{Y_0\}^{K\,(Z\pm M)/t}=(1-\eta_{Mjik}{}^2)^{K\,(Z\pm M)/t}\{X_0\}^{K\,(Z\pm M)/t}$

6.8 Clustering, clustering elements and quantum gauge field

The physical gauge field of the quantum world: "Dirac quantum equation, Maxwell's electromagnetic equation, Einstein gravitational space equation" proposed by Yang Zhenning-Mills "Gauge Field" constitute "quantized calculation". Requires "no specific quality factors"

Way to calculate. Using the circle logarithm map algorithm, the above-mentioned physical observation particles are all converted into cluster sets, clusters, and elements are converted into algebraic equations (calculus polynomials) called characteristic modes. Mapping to the unlabeled logarithmic equation of the circle, analysis and cognition between {0 to 1} in the shared time series.

As (Figure 6) describes the microscopic Dirac quantum equation, physical experiments show that there are particle mass, motion vector, energy, and the Higgs particles with light particles and neutral particles {M} as the center zero point and constitute a relatively symmetrical distribution:

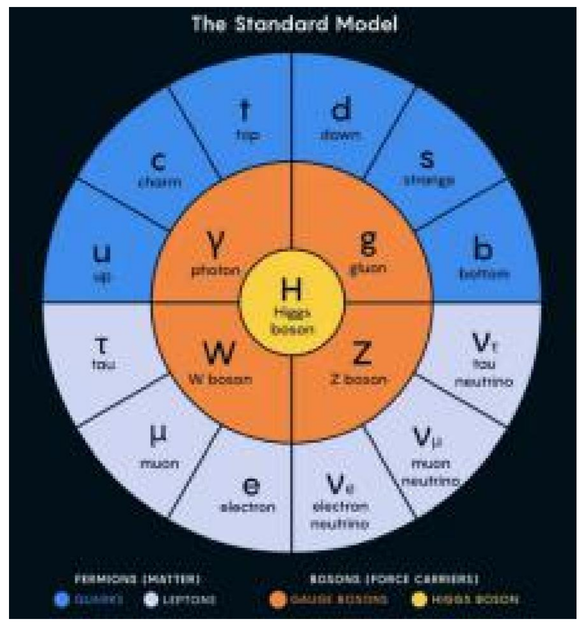


Figure 6. Schematic diagram of particle distribution (quoted from a network article)

As shown in Figure 6 (quoted from a network article) that is to say, the quantity particles $\{q_{jik}\}$ are distributed according to the level limit $\{0,1/2,1\}^{K\,(Z\pm M)/t}$ according to momentum, kinetic energy, weight, orbit, and space:

Define the basic particles of 6.8.1 Standard Model:

(1), Lepton (Lepton) electron (e^-) (Electron), neutrino (υ_e) (neutrino).

It was later discovered that μ^{--}, τ^{--}, ν_μ, ν_τ; lepton spin (S=1/2) they are all fermions. υe, υμ, υτ are not charged; e^-, μ^{--}, τ are charged with a unit of negative charge, forming three generations of leptons.

(2) Three generations of quark particles (u, d, c, s, t, b) spin (S=1/2);

(3) Three generations of gauge bosons (r, g, w+, w^{--}, z_0)

(4) Higgs particles (H)

{H} level neutral particles with $\{H\}^{K\,(Z\pm M)/t}$ (Higgs) boson as the center and zero point (K=±0 or ±1): Standard particle $\{q\}=\{q_{jik}\}\}^{K\,(Z\pm Q\pm S\pm M\pm N\pm q\pm 3)/t}$ has three elements $\{M_{qjik}\text{-}\omega_{qjik}\text{-}\{r_{qjik}\}^{K\,(Z\pm Q\pm S\pm M\pm N\pm q\pm 3)/t}$ composes hundreds of millions of " "Triples" algebraic equation, carry out the algebraic structure of "3-3 or 0-0combination" + "2-2 combination" + "1-1 combination", mapped to unlabeled circle logarithmic equation, between [0 to 1] The calculation becomes a visual and reversible circle logarithmic graph. Each particle "triple {qjik}" hierarchical combination form "Gellman matrix" combination coefficient = {2}3 = 8; (called 8-fold operator).

(6.8.1) $\{q\}^{K\,(Z)/}=\{H\}^{K\,(Z)/t}=(H_{jik})^{K\,(Z\pm M)/t}=\{X\}^{K\,(ZM)/t}=\{M_{Qjik}\text{-}\omega_{Qjik}\text{-}\{r_{Qjik}\}^{K\,(Z\pm Q\pm S\pm M\pm N\pm q)/t}$;

$\{M_{Qjik}\text{-}\omega_{Qjik}\}\text{-}\{r_{Qjik}\}$: compose the particle spin and motion vector state (called within-distance point, weight)

$\{M_{Qjik}\text{-}r_{Qjik}\}\text{-}\{\omega_{Qjik}\}$: compose particle rotation, radiation, energy, and force state (called out-of-distance point, orbit)

$\{\omega_{Qjik}\text{-}r_{Qjik}\}\text{-}\{M_{Qjik}\}$: compose the massless particle spin, radiation, and energy state (called vortex structure space)

Within the scope of force, momentum, kinetic energy, and massless space, there are three interactions of "positive, medium, and negative":

(K=-1) Power level; (K=+1) Weak power level; (K=±0 or ±1) Light power level.

Including various physical quantum content $\{M_{Qjik}\}^{K\ (Z\pm M)/t}\text{-}\{\omega_{Qjik}\}^{K\ (Z\pm M)/t}\text{-}\{r_{Qjik}\}^{K\ (Z\pm M)/t}$: the effect (effect) and parameters (parameters are included in the mass element) of the logarithm of the circle $(1-\eta_{Mjik}{}^2)^{K\ (ZM)/t}$, In the unlabeled circle logarithm, it is automatically eliminated due to the principle of relativity).$^{K\ (Z\pm M)/t}$

Define 6.8.2 the particle distribution quantum gauge field (M multimedia state level),

$\{H\}^{K\ (ZM)/t}$ (Higgs)$=\{X\}^{K\ (Z\pm M)/t}=\{M_{Qjik}\}^{K\ (Z\pm M)/t}\text{-}\{\omega_{Qjik}\}^{K\ (Z\pm M)/t}\text{-}\{r_{Qjik}\}^{K\ (Z\pm M)/t}=\{J\ (M_{jik})\}^{K\ (Z\pm M)/t}$;
$J\ (M_{jik})^{K\ (ZM)/t}=\{$H (higgs)$=\{$g (gluon);Z (Z boson);W (w boson);V (pholon)$\}^{K\ (Z\pm M)/t}$;
$\{X_g\}^{K\ (ZM)/t}=$ g (gluon)$^{K\ (ZM)/t}=\{$d (down);S (strange);b (botton)$\}^{K\ (Z\pm M)/t}$;
$\{X_W\}^{K\ (ZM)/t}=$W (w boson)$^{K\ (ZM)/t}=\{$e (electron);μ(muon); τ (tou)$\}^{K\ (Z\pm M)/t}$;
$\{X_Z\}^{K\ (ZM)/t}=$Z (Z boson)$^{K\ (ZM)/t}=\{\mathbf{v}_\tau$(tou);$\mathbf{v}_\mu$(strange);$\mathbf{v_e}$ (electron neulrino)$\}^{K\ (Z\pm M)/t}$;
$\{X_V\}^{K\ (ZM)/t}=$V (pholon)$\}^{K\ (ZM)/t}=\{$u (up);C (charm);t (top)$\}^{K\ (ZM)/t}$;
$\{X\}^{K\ (Z\pm M)/t}=\{X\}^{K\ (Z\pm Q\pm S\pm M\pm N\pm q)/t}$
composed of the above quantum gauge field particles at various levels $\{M_{Qjik}\}\text{-}\{\omega_{Qjik}\}\text{-}\{r_{Qjik}\}$
(Q)=1; (M)=4; (N)=3(0,1,2); (q)=12; (K)=3;
get {M level}(S)=1×4×3×12×3=432;
particles (dimension) (qjik) matrix of 432 particles=3, composing 432×8=3456 kinds of combined calculus equations; mapped to neural network atlas $(1-\eta_{gjik}{}^2)^{K\ (Z\pm Q\pm S\pm M\pm N\pm q)/t}$, to analyze and recognize the algebra-geometry-group theory of the circlelogarithm map.

$$(6.8.2)\ \{x_q\pm({}^{KS}\sqrt{D})\}^{K\ (Z\pm Q\pm S\pm M\pm N\pm q)/t}=\sum_{(j=S)}[\ (1/C_{\ (S\pm M\pm N\pm q)})^{K}\prod_{(j=(S\pm M\pm N\pm q)}\{X_{q\ (M\omega r)}\})^{K\ (Z\pm Q\pm S\pm M\pm N\pm q)/t}$$
$$=(1-\eta_{gjik}{}^2)^{K\ (Z\pm Q\pm S\pm M\pm N\pm q)/t}\{0,2\}^{K\ (Z\pm Q\pm S\pm M\pm N\pm q)/t}\{D_0\}^{K\ (Z\pm Q\pm S\pm M\pm N\pm q)/t}$$

The formula (6.8.2) describes the unlabeled calculation $(1-\eta_{gjik}{}^2)^{K\ (Z\pm Q\pm S\pm M\pm N\pm q)/t}$ of each combination level of the microscopic quantum;

The precession state of spin plus radiation $\{0,2\}^{K\ (Z\pm Q\pm S\pm M\pm N\pm q)/t}$; the characteristic mode of particle composition reflects the combined average state of each level $\{D_0\}^{K\ (Z\pm Q\pm S\pm M\pm N\pm q)/t}$.

Since the quantum particles are processed by the relative central zero point of the unity, they belong to the "asymmetry of discrete states and the interaction of entangled states, as well as the presence or absence of mass", which can be adapted to "gravity, electromagnetic, quantum force, light force, heat, radiation, etc." "Under the "irrelevant mathematical model", unified unlabeled "circle logarithmic topology algorithm".

6.9. Clustering, clustering, element generalization issues

Artificial intelligence can be widely adapted in various scientific fields. The function is composed of the knowledge conversion symbol, symbol conversion data, and data of "universe-quantity particle-cell-brain", and the function is mapped to unlabeled circle logarithm graph analysis calculation calculation. It has strong adaptability, allowing machines to replace human brain thinking activities.

The premise of their generalization: The big data knowledge base contains as much as possible the current human knowledge, which is transformed into clusters and elements. It is called "characteristic mode" or "quantization (unit, probability, topology, relative symmetry)".

$$(6.9.1)\ J\{D_q\}^{K\ (Z\pm Q)/t}=(1/C_{\ (S\pm Q\pm M\pm N\pm q)})^{K}\{x_{jik}\omega_{jik}r_{jik}\}^{K\ (ZMq)/t}\in\{q_{jik}\}^{K\ (Z\pm M)/t}$$

Physics: Neural network $\{x_{Qjik}\omega_{Qjik}r_{Qjik}\}$ consists of "value $\{x_{Qjik}\}$-weight $\{M_{jik}\ \text{-}\omega_{jik}\}$ (inner spin space)-orbit $\{M_{jik}\text{-}\ r_{jik}\}$ (outer spin space)", and $\{r_{jik}\text{-}\omega_{jik}\}$ The "three elements" of massless space.

"2-2 combination level (N=±2, second-order dynamic vector calculus, acceleration, kinetic energy, two element combination)"

"1-1 combination level (N=±1, first-order dynamic vector calculus, velocity, dynamic vector, linear combination)";

"0-0 or 3-3 combination" (N=±0 or ±3, zero-order calculus dynamic vector, center zero point is relatively symmetric, conversion, threshold)";

Each "triad" calculus equation has $\{0\}^{K\ (Z\pm M)/t}$ (spin, weight); $\{2\}^{K\ (Z\pm M)/t}$ (revolution, orbit); $\{0,\ 2\}^{K\ (Z\pm M)/t}$ (spin + revolution) constitutes the vortex structure space.

(1) Microcosm: $\{M_{Qjik}\text{-}r_{Qjik}\}^{K\ (Z\pm M)/t}\text{-}\{\omega_{Qjik}\}^{K\ (Z\pm M)/t}$:

composition $(1-\eta_{Mjik}{}^{2})^{K\ (Z\pm M)/t}$ (K=-1); strength level; (K=+1), Weak force level; (K=±0 or ±1) light action level. Including various physical effects (effects) and parameters (parameter packages, Contained in the quality element, in the unlabeled round logarithm, it is automatically eliminated due to the principle of relativity). It is conjectured that in each level, such as the strong level, there are also positive force, anti-strong force, and neutral force bending space.

(6.9.2) $\rightarrow(1-\eta_{jik}{}^{2})^{K\ (Z\pm M)/t}$ (K=±0 or ±1) (conversion)→ $(1-\eta_{jik}{}^{2})^{K\ (Z\pm M)/t}$ (K=-1) (strong)→
$\rightarrow(1-\eta_{jik}{}^{2})^{K\ (Z\pm M)/t}$ (K=+1) (weak force)= $(1-\eta_{jik}{}^{2})^{K\ (Z\pm M)/t}\rightarrow$;

(2) The neutral (thermal, optical) world $\{\omega_{Qjik}\text{-}r_{Qjik}\}^{K\ (Z\pm M)/t}\text{-}\{M_{Qjik}\}^{K\ (Z\pm M)/t}$ is composed of $(1-\eta_{Mjik}{}^{2})^{K\ (Z\pm M)/t}$ (K=±0 or ±1). Including various physical effects (effects) and parameters (parameters are included in the quality element, and in the unlabeled circle logarithm, they are automatically eliminated due to the principle of relativity). In each level, such as the strong level, there are also positive (heat, light) force, counter (heat, light) force, neutral (heat, light, force) bending space, etc.

(3) Cosmic world: $\{M_{Qjik}\}^{K\ (Z\pm M)/t}\text{-}\{\omega_{Qjik}\}^{K\ (Z\pm M)/t}\text{-}\{r_{Qjik}\}^{K\ (Z\pm M)/t}$: the composition can be cycled-transformed (cosmic regeneration-universe big bang-universe death-universe regeneration) relative symmetry distribution $(1-\eta_{Mjik}{}^{2})^{K\ (Z\pm M)/t}$ (K=+1, ±0 or ±1, -1). Including various physical effects (effects) and parameters (parameters are included in the quality element, and in the unlabeled circle logarithm, they are automatically eliminated due to the principle of relativity). In each level, there is a composition of quality element particles: the relative symmetry distribution of circulation (→Big Bang-Universe Demise-Universe Regeneration-) $(1-\eta_{Mjik}{}^{2})^{K\ (Z\pm M)/t}$ (K=+1, ±0 or ±1). The forward direction means convergence, the reverse direction means expansion, and the neutral direction means conversion, sudden change and explosion. The invariance of the total cosmic mass also contains infinite levels of dark matter and dark energy, forming a cosmic cycle.

(6.9.3) $\rightarrow(1-\eta_{jik}{}^{2})^{K\ (Z\pm M)/t}$ (K=±0 or ±1) (explosion) → $(1-\eta_{jik}{}^{2})^{K\ (Z\pm M)/t}$ (K= - 1) (Expansion)
$\rightarrow(1-\eta_{jik}{}^{2})^{K\ (Z\pm M)/t}$ (K=+1) (convergence)= $(1-\eta_{jik}{}^{2})^{K\ (Z\pm M)/t}\rightarrow$;

(4) Biological world: $\{M_{Qjik}\}^{K\ (Z\pm M)/t}\text{-}\{\omega_{Qjik}\}^{K\ (Z\pm M)/t}\text{-}\{r_{Qjik}\}^{K\ (Z\pm M)/t}$: compose each level: the positive direction that constitutes the decline level represents growth, the reverse direction represents decline, and the neutral represents the mutation and transformation of seeds and eggs. cycle. (fractal constant)

(6.9.4) $\rightarrow(1-\eta_{jik}{}^{2})^{0(Z\pm M)/t}$ (K=±0 or ±1)→ $(1-\eta_{jik}{}^{2})^{+(Z\pm M)/t}$ (K=+1)→
$\rightarrow(1-\eta_{jik}{}^{2})^{-(Z\pm M)/t}$ (K=-1)= $(1-\eta_{jik}{}^{2})^{0(Z\pm M)/t}\rightarrow$;

(5) Human brain work world: $\{M_{Qjik}\}^{K\ (Z\pm M)/t}\text{-}\{\omega_{Qjik}\}^{K\ (Z\pm M)/t}\text{-}\{r_{Qjik}\}^{K\ (Z\pm M)/t}$: compose all levels of knowledge and experience: compose levels of forward representation analysis, reverse representation of induction, neutral representation of levels of judgment, conclusions and other cycles.

(6.9.5) $\rightarrow(1-\eta_{jik}{}^{2})^{0(Z\pm M)/t}$ (K=±0 or ±1)→ $(1-\eta_{jik}{}^{2})^{+(Z\pm M)/t}$ (K=+1)→
$\rightarrow(1-\eta_{jik}{}^{2})^{-(Z\pm M)/t}$ (K=-1)= $(1-\eta_{jik}{}^{2})^{0(Z\pm M)/t}\rightarrow$;

(6) Map world: $\{M_{Qjik}\}\text{-}\{\omega_{Qjik}\}\text{-}\{r_{Qjik}\}$: composes the various levels: the forward representation of the composition level represents the encoder, the reverse represents the decoder, and the neutral represents the level mutation, identifier and other cycles.

(6.9.6) $\rightarrow(1-\eta_{jik}{}^{2})^{0(Z\pm M)/t}$ (K=±0 or ±1)→ $(1-\eta_{jik}{}^{2})^{+(Z\pm M)/t}$ (K=+1)→
$\rightarrow(1-\eta_{jik}{}^{2})^{-(Z\pm M)/t}$ (K=-1)= $(1-\eta_{jik}{}^{2})^{0(Z\pm M)/t}\rightarrow$;

Based on the effects (effects) and parameters of various physics-biology-chemistry-neural networks:

Such as G gravitational constant; C vacuum speed of light; h Planck's constant; 22 physical constants such as k, σ Boltzmann thermal constant; and mathematical π pi; γ fractal constant; e Euler constant; a Naples constant Etc.) are included in the combination of quality or mathematical elements in the characteristic models of various scientific fields. In the unlabeled circle logarithm, it is automatically eliminated due to the principle of relativity).

In the same way, the circle logarithm map algorithm is also adapted to various scientific fields such as natural science, philosophy, economics, image, audio and video, natural language, communication code, genetic information code... and so on.

The above links nature (knowledge)-mathematics (symbols and data)-network (cognitive map) Figure 7 The mediation structure of light (the cover of "Science" journal), forming a five-dimensional vortex of spin plus precession (radiation)

Figure 7 is the Spanish-American optical measurement team（Quoted from network pictures）

Figure 8. Scroll blade structure

The structure shows the broad potential and powerful vision of artificial intelligence. The content shown in. Observing the experimental results, they verified the "vortex structure" proposed by the circular logarithm map algorithm.

The content shown in Figure 8 is a model made by the author in which the "vortex blade structure" of a certain hydraulic turbine is placed upside down (Note: The following part is the working content of the generator, which should be "water intake" on the top). Working principle: The pressure of the water level difference enters the volute, the water pressure pushes the vortex blade to rotate, and the blade rotates.

Drive the generator. In addition, he also produced the "turbojet engine", "rotating machinery" engineering sequence scroll blade model, etc., obtained invention patents, and tried to practice the "vortex structure" proposed by the circle logarithm map algorithm.

6.10. Problems and reorganization of artificial intelligence

At present, artificial intelligence looks very brilliant, but there are many problems. It shows that the programs and algorithms lag behind the computing power of the computer. The fundamental reason is that the mathematical calculus polynomial algorithm has not made breakthrough progress so far. When the calculus polynomial is solved and converted to unlabeled logarithm, the computer program will behave in reformation. The comparison between traditional artificial intelligence and the logarithmic method is as follows:

(1). The resistance and flexibility of traditional artificial intelligence are not enough, because the basic elements of traditional clustering use the interface "two-tuple" "$\{q\}=\{q_{ji}\}$", and the element size is "2×2 matrix=4 ". The basic elements of the cluster set use the central point "triple" "$\{q\}=\{q_{jik}\}$", the element is "3×3 matrix=8", plus the property element K=3(+1,0,- 1) The volume is "3×8=24", which has strong antagonism and flexibility.

(2). Traditional artificial intelligence is not stable enough, especially symmetry control is unstable. The circle logarithm uses the concept of the central zero point to convert asymmetry to relative symmetry, which can well control hidden qualitative problems such as probability, topology, and time series.

(3). The interpretability of traditional artificial intelligence is not enough, which is manifested as the synchronization of encoder and decoder. The circle logarithm has reciprocity, complementarity and isomorphism combine the two parts of the encoder and the decoder into one, which not only saves chip space and capacity, but also automatically becomes a discriminator.

(4). Traditional artificial intelligence is not robust enough. It is easy to be interfered by the outside world and needs to be identified and corrected at any time. The logarithm of a circle is a relatively symmetrical distribution of the topological combination and probability of each level and sub-item based on the concept of closed clustering and all-element combination. Even small differences can be found at the level, and it is exclusive. External interference is difficult to invade.

(5). The traditional artificial intelligence high-parallel multi-media solution is not convenient enough. Round logarithm can not only solve the multi-media state, but also can map face recognition, fingerprint recognition, custom passwords, bank cards, digital renminbi, keys, etc. to the chip and information. Only specific terminals can be processed and cracked. It has high security, privacy and openness.

(6). The circle logarithm map also proposes a universal five-dimensional vortex structure in the field of mathematics, and proposes the concept of "chip vertical (magic square) arrangement", "core and screen integration", etc., to provide mathematics for the establishment of novel computer manufacturing basis.

The circular logarithmic graph algorithm not only involves the reorganization and development of computer programs, but also involves the reorganization and reform of contemporary traditional mathematics. It also proposed the "core-screen integration" and the five-dimensional vortex structure to create a new generation of artificial intelligence for the realization of new development from software development to software and hardware.

7. The mathematical foundation of the circle logarithm graph algorithm

"Circular logarithmic graph algorithm", with a simple unsupervised learning formula and geometric space or network space form into a new generation of artificial intelligence (known as "artificial intelligence third generation"). What is their mathematical basis?

The exploration of mathematical algorithms, starting from Napier-Euler logarithms, binary equations, and ternary equations hundreds of years ago, broke through a series of forbidden areas and difficulties in mathematics; reformed calculus polynomials to expand time series; Transformed pattern recognition, artificial intelligence, and neural network to integrate the central zero point, probability, topology, and time series; reorganized into a five-dimensional vortex structure. Using traditional mathematics as a tool, the entire mathematical analysis foundation has been shaken for hundreds of years. Its important content involves:

(1) It is impossible for equations of the fifth degree or more that break through the "Abel Impossibility Theorem" to have root solutions-establish the root solution method of the logarithm of the circle, and solve the solution of any high-order calculus polynomial.

(2) The "reciprocal theorem" AB=1 (constant) to prove the uncertainty is called the yeast of the mathematical theorem-to establish the logarithm based on the quadratic circular function, with regularized positive, middle, and negative The model of the average characteristic of the function of the property is called the logarithm of the circle and the characteristic mode.

(3) The requirement to prove the "Huoqiu Conjecture" is that the algebra-geometric clusters combine and decompose integers in a simple way-establish that the arithmetic mean and geometric mean are used as the base point of the sample feature mode, and should not be used for any number of clusters. Repeated continuous multiplication and continuous addition of algebraic clusters obtain the integer linear expansion of the power function-time series, which is called the unit circle logarithm.

(4) Prove the "Riemann Conjecture": The abnormal zero point of the Riemann zeta function is {1/2} everywhere on the critical line-the concept of the central zero point is established, and symmetry and symmetry, uniformity and unevenness, sparseness and Non-sparseness is unified as relative symmetry, which is called the logarithm of the circle of symmetry at the center zero point.

(5). Prove that "(strong, weak) Goldbach’s conjecture"-the limit equilibrium of the sum of any sufficiently large two prime numbers and three prime numbers is an even number {2}.

(6) Prove that "P=NP complete problem"-simple polynomials and arbitrarily complex and uncertain polynomials have isomorphic and consistent calculation times, that is, time series. It is called the logarithm of the isomorphic topological circle.

(7). Prove that "Fermat's Last Theorem xn+yn=zn" said that "an equation other than n=2 does not hold"-the applicable symmetry center ellipse of Fermat's Last Theorem proved by British mathematician Wiles, The extended proof is that the symmetric central ellipse is consistent with the asymmetric eccentric ellipse, and the equation of Fermat's Last Theorem is applicable to any power function $n \geq 2$. Clarified the mutual conversion relationship between the exact central circle (ring)-central ellipse (ring)-eccentric ellipse (ring)-any closed curved circle (ring). Successfully dealt with the power invariance, and the arbitrary asymmetry function is converted into a relative symmetry function.

(8) Expand "Bayes' Theorem"-establish a close dependence relationship between the logarithm of the circle and the characteristic mode, integrate the logarithm algorithm of the "central zero-probability-topology-time series" as one, and handle it well The contradiction between the prior and the posterior of the clustering set, the causality, the consistency of computer input and output, has expanded the application scope of Bayes' theorem. Called circle logarithm map algorithm.

(9) Prove the "gauge field" based on the circle logarithm map algorithm. Massive and massless particles interacting in entangled states: the microscopic Dirac equation, the macroscopic gravitational equation, Maxwell's electromagnetic equation, the neutral bending space (space-time) equation, and the optical not mentioned Particles, thermodynamic particles, and other kinds of particles uniformly realize the circle logarithm map algorithm of "no mass element content" or "irrelevant mathematical model".

(10) Prove the "NS equation" based on the circle logarithm graph algorithm. Randomly formed discrete fluid clusters with different mass density, different energy, different space, symmetrical and asymmetrical, sparse and non-sparse, and unified into the circle logarithm map algorithm.

(11) Based on the circle logarithm map algorithm to prove the "light particles": uniform neutral particles with vortex structure without mass, which can be converted into forward suction mass particles and reverse repulsion mass particles, unified into a circle pair Number map algorithm. Among them, the vortex structure of light particles was experimentally confirmed by the U.S.-Spain optical measurement team in 2018 and published in the December "Science" journal. The conversion of neutral light particles (including neutral Higgs particles) into mass positive, neutral, and anti-particles has been proven many times in physical high-energy particle experiments.

(12) Based on the circle logarithm graph algorithm to expand the "number theory and prime number distribution theorem", the central zero point, relative symmetric probability, unitity, topology, and logarithm normalization of the "independent mathematical model" are proposed. It is proved that the natural number sequence can be constructed as a "five-dimensional vortex space structure". Realize "the self-consistent fusion of real infinite characteristic mode and latent infinite circle logarithm in [0 to 1]".

(13) Based on the circle logarithm map algorithm, it is proved that the "four-color theorem" is a four-element group of billions of four colors without repeated combinations.

(14) Based on the circle logarithmic graph algorithm, it is proved that the "Pebonacci sequence" (the following value is the sum of the previous two values) is (A+B=C) the three elements are not repeated and distributed asymmetrically. Ten thousand triples.

(15) Based on the circle logarithm map algorithm, it is proved that any closed curve, surface, sphere (ring) of the "Poincaré Conjecture" takes the center zero point as the homeomorphic center, and converges inward from the boundary to a perfect circle (ring). The inner diffusion is a perfect circle (ring), which is converted into a "concentric circle".

(16) The algorithm based on the circle logarithm map attempts to prove that the natural universe rules and the working mechanism of the human brain may belong to a common mathematical algorithm.

At present, although human scientific development has made sufficient progress, mathematical modeling suitable for various fields has been proposed. The circle logarithm map algorithm is still based on these mathematical analysis and cognition. Before truly unlocking the secrets of the universe, the working mechanism of the human brain, and the rules of life cell metabolism. We still face the following difficult problems, which need to be explored and deepened.

(1) How to deal with the contradiction of the difference between the simulation environment and the real environment better?

(2) Whether it can satisfy the conversion of asymmetry to relative symmetry;

(3) Whether the working mechanism of the human brain is processed by a logarithmic function like unsupervised learning;

(4) Whether the high-parallel multi-media state can be coordinated and unified through the circle logarithmic time series;

(5) Whether the rules of the universe and the working mechanism of the human brain can be unified through logarithms.

Although the circle logarithm proposes a unified irrelevant mathematical model, the unsupervised learning vortex structure between [0 to 1] reflects the scientificity, generalization, reliability, stability, and openness of the circle logarithm., Security, interpretability and robustness. Adapt to the characteristic functions, analysis and cognition established in many scientific fields. It needs to pass the work test and the verification of time and history.

8. Conclusion

The circle logarithm map algorithm combines the current cognitive analysis of pattern recognition with various vector recognition and analysis methods, as well as better loss functions and convolutional neural networks (CNN), recurrent neural networks (RNN), long and short memory neural networks (LSTN), Sinton's Deep Belief Network (DBN), etc., can be improved and integrated through logarithms of circles and feature modes. Specifically, it is based on the global overall view to form the feature model of the cluster set elements (billions of triples$\{q\}^{K(Z)/t}$= $\{qjik\}^{K(Z)/t}$, which is mapped to no specific element content, Unlabeled quadratic round logarithm, infinite time series integration between [0 to 1] as a whole data processing, with knowledge, data, algorithm, computing power and other elements integrated and interpretable, robust, reciprocity, complementarity, generalization, high parallelism, high precision, security, stability, shared analysis-cognitive ability and strong AI vitality.

(7.1) $W=(1-\eta 2)^{K(Z)/t}\{0,2\}^{K(Z)/t}W0$;

(7.2) $(1-\eta 2)^{K(Z)/t}=(1-\eta_H 2)^{K(Z)/t} \bullet (1-\eta_\omega 2)^{K(Z)/t} \bullet (1-\eta_T 2)^{K(Z)/t}$;

(7.3) $0\le(1-\eta 2)^{K(Z)/t}\le 1$;

(7.4) Input$\{X_0\}^{K(Z)/t}$; Output$\{Y\}^{K(Z)/t}=[(\eta_\omega)$ or $(1-\eta_\omega^2)]^{K(Z)/t} \bullet \{X_0\}^{K(Z)/t}$;

From the avenue to the simplicity, a simple mathematical expression forms a universal formula-through the time series of concentric circles, it can contain the rules of the entire digital universe and the working mechanism of the human brain. Stunning and questionable. However, this is an objective fact. Waiting for the test of history and time.

Our team will further practice the theoretical research and engineering practice of the circular logarithmic graph algorithm. Strive for the implementation of national or private entity projects and try to resolve the contradiction between exploration and utilization.

The algorithm based on the circle logarithm graph is a novel calculation system, and it is inevitable that there are deficiencies. The algorithm system mentioned needs to be further expanded and completed. We sincerely hope that relevant experts, scholars and researchers at home and abroad will participate in cooperation and supplement.

Our team confidently looks forward to the future with world scientists. (Finish)

Reference

1. Zhang Bo, etc. "Towards the Third Generation of Artificial Intelligence" Science in China: Information Science, Volume 50, Issue 9, 2020 1281-1302.
2. "Modern Pattern Recognition" edited by Sun Jixiang, Higher Education Press, November 20012.
3. "Pattern Recognition Principles and Engineering Applications" edited by Zhou Lifang, Machinery Industry Press, June 2013, 1st edition.
4. "Pattern Recognition and Intelligent Computing Implementation of MATLAB" edited by Xu Guogen, published by Beijing University of Aeronautics and Astronautics Press in June 2014.
5. "Langlands Program", "100 Scientific Problems in the 21st Century" p793-p798 Jilin People's Publishing House, January 2000.
6. [America] M. Klein, Deng Donggao, etc. Translated "Ancient and Modern Mathematical Thoughts" (Volumes 1, 2 and 3) Shanghai Science and Technology Press August 2014.
7. [America] M·Livio "Meditations on Mathematics" translated by Huang Zheng, published by Beijing People's Posts and Telecommunications Press in September 2011.
8. Yang Guilin and others edited "Modern Physics" p257-270 Beijing·Science and Technology Press 2006.7.
9. Wang Yiping "NP-P and the Structure of Relativity" [America] "Journal of Mathematics and Statistical Sciences" (JCCM) September 2018 p1-14.
10. Wang Yiping, "Exploring the Scientific Philosophy and Application of Langlands Program", "International Journal of Advanced Research" (ILAR), January 2020 p466-500.
11. Wang Yiping, "Exploring the Reform Path of Calculus Based on the Logarithm of the Circle", "International Journal of Advanced Research" (ILAR) April 2020.
12. Yiping, Wang. Exploring Goldbach's Conjecture, The Pebonacci Sequence And Its Five-Dimensional Vortex Structure Based On The Logarithm Of The Circle. Advances in Social Sciences Research Journal, (2020)7(8) 398-408.

11/22/2020