

# Extract news topic of "I Ching" divination with Topic analysis

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*Abstract—...*

*Index Terms—*Divination, I Ching, Topic analysis, self-organizing map.

## I. INTRODUCTION

China's rapid economic development in the 21st Century created a global impact. As a result, Chinese culture started attracting increasing attention from Western countries [2]. China's rise to power has affected business, politics, and academia, making the culture and knowledge of China is getting more and more attention. Understanding Chinese culture is therefore becoming important. It is interesting to study the behavior of people influenced by Chinese culture. One of the fascinating Chinese cultures is divination called "I Ching".

I Ching is one of the bases of major ancient Chinese knowledge. [3]described the I Ching as 'a must-read for any ruler' in The Book of Han. In China, the Four Books and Five Classics (Sishu Wujing) are considered to occupy noble, historical, and cultural positions, whilst the I Ching, seen as 'the first among the classics', was greatly respected by ancient Chinese statesmen and the literati.

[4]explained in 'the Commentaries of the I Ching' that 'I Ching is used as a mention to make decisions in the world, handle human relationships, and clarify methods for governing. They declared that the principles of deduction and inference establish in the I Ching could be widely used in governance, politics, management, and human relations as main directions for future actions. In conclusion, I Ching studied the environment to separate things. And find the balance of that system.

Although the Chinese regard the theories contained in the I Ching as proven intellectual principles, the Western-educated generations feel that there has been a lack of empirical research on the I Ching using contemporary and scientific methods [6].

However, the rise of China's power has made education in I Ching more interesting. In academic fields has developed I Ching for use in their respective fields. The I Ching, a classic part of Chinese culture, gradually drew the attention of scholars both at home and abroad [2]. Moreover, Theories from the I Ching have drawn cumulative attention internationally in recent years and relevant studies and applications of these have emerged in various disciplines. [5]

[2] compared the differences between the decision-making models of the I Ching and Western management theories, as well as rational, bounded-rational, intuitive, implicit-favorite, and garbage-can decision-making models, and claimed that the decision-making model of the I Ching is appropriate to management practices and provides a reference for decision making when complete information is unavailable.

Because the I Ching knowledge has been used and developed from the more powerful countries of the world (the world's largest buyer) and has long been interested in I Ching. So education to understand the development of I Ching knowledge to the world is important.

## II. LITERATURE REVIEW

### A. History and Structure

The I Ching or Yi Jing is an ancient Chinese divination text and among the ancient of the Chinese classics. In the first place a divination manual in the Western Zhou period (1000–750 BC), over the direction of the Warring States period and early imperial period (500–200 BC) it was converted into a cosmological text with a series of philosophical commentaries known as the "Ten Wings".[20] The essence of the I Ching is a Western Zhou divination text called the Changes of Zhou .[21] Various contemporary scholars indicate dates ranging between the 10th and 4th centuries BC for the assembly of the text in approximately its current form.[22] Hexagram In the canonical I Ching, the hexagrams are arranged in an order dubbed the King Wen sequence after King Wen of Zhou, who founded the Zhou dynasty and supposedly reformed the method of interpretation. The sequence generally pairs hexagrams with their upside-down equivalents, although in eight cases hexagrams are paired with their inversion.[23] Yin and yang are represented by broken and solid lines: yin is broken ( - - ) and yang is solid ( — ). Different constructions of three yin and yang lines lead to eight trigrams namely, Qian , Dui , Li , Zhen , Xun , Kan , Gen , Kun. The different combinations of the two trigrams lead to 64 hexagrams, it is called Bagua.

[6] pointed out that the I Ching naming system is easy to apply because it requires only the stroke-count of each character and therefore has great potential for future development in talent selection processes. With various combinations of Bagua, Yinyang, and Wu Xing, the I Ching naming system, made up of 64 hexagrams (8 x 8), can be employed as a reference to classify individuals' traits and social status as well as determine their future development. Using permutations and combinations of sheng and ke of Wu Xing as its technique base, the I Ching naming system generates a classification of people's traits and social status by interpreting relationships among human beings, physical objects, and the environment by applying the concepts of tiange (heavenly traits), renga (personal traits), dige (earth traits), waige (external traits), and zongge (overall traits).

the theories of the I Ching and Bagua can evolve with time and space, take any form in the world, and be converted into

any fundamental concept related to human beings, temporal events, or physical objects [5]

Mutual creation refers to the fact that one element provides support for the development of a second element, that is, among the five elements, metal enriches water, water nourishes wood, wood feeds fire, fire creates earth (ash), earth bears metal, metal further enriches water, and hence, an endless, vitalized cycle. Mutual prevalence refers to the fact that one element represses another to maintain balance among the five elements; specifically, metal chops wood, wood parts earth, earth sink water, water extinguishes fire, and fire melts metal, and thus, a second endless cycle continues [6].

### B. I Ching in academic areas.

For example, how to improve I Ching in academic areas:

- \*I-Ching Divination Evolutionary Algorithm and its Convergence Analysis; They used the I Ching system to solve optimization problem.

- \*Design of Highly Nonlinear Substitution Boxes Based on I-Ching Operators; They design substitution boxes (S-Boxes) using innovative I-Ching operators (ICOs) that have evolved from ancient Chinese I-Ching philosophy.

- \*Thinking and Modeling for Big Data from the Perspective of the I Ching; They propose the big data thinking and modeling techniques from the perspective of the I Ching theory.

### C. Fortune telling online service.

[7]reported that 52% of the 1,079 surveyed respondents in her survey indicated that they consulted fortune tellers. Another scholar reported that 45 surveyed couples said that they consulted fortune tellers prior to marriage in order to find out whether or not their horoscopes were a good match [8]. Based on a longitudinal study of three national sample surveys, [9]pointed out that uncertainties in domestic political and economic situations were a significant contributing factor in influencing Taiwanese people to seek out fortune telling services.

According to Kasikorn Thai Research Center [11]The fortune telling market worth 56 Million USD and it is a growing market. Female were majority who used fortune teller service with 63[12]While a generation Y or millennial was a group of people who had the most impact for online fortune telling service industry as they used internet the most [10].

Generation Y and millennials had the most impact on online fortune telling service industry as they used internet the most [10].

### D. Customer Behavior.

The reviews and ratings are the value-added factors for other buyers on the Internet as well [14]. The information obtained from reviews, ratings, and recommendation in online community enhances customers' knowledge of the product and is the element that handholds customers from the decision process and making actual purchases [15].

Consumers often make purchase decisions from the information that they gather. The information search process is

costly and time consuming as there are tradeoffs between perceived cost and benefits of additional search [16].

If a product or a service is in a wide range of choices, customers know that there are tradeoffs between effort and accuracy[17].

Experience goods, such as music, are products that require sampling to evaluate its quality,[18]. For experience goods, it is a matter of personal taste and falls on a more difficult side to be evaluated effectively. Its nature is different from search goods, which is an easier product to be evaluated and compared with objective manners [19]The example of search goods are automobiles and computers.

## III. METHODOLOGY

The method of this study started from secondary research to investigate an overview of I Ching divination online news with Topic Analysis. Secondary research was used as the preliminary study method to examine the outline of the fortune-telling communities, for customer behavior, media profile, source of information for reviews, and number of views. The desk research also explored the effect of I Ching culture in online platforms, as well as the behavior of people toward online fortune telling topic.

Data set The data set is collected by scraping a web framework that is about the post of news and talking about I Ching from users in ICHING . The data set contain news post, headline, date, number of views, and last active postdate.

Exploratory Data Analysis (EDA) The data set has 3 type data. There are numerical data, non-numerical data, and unstructured data. Numerical data

- Number of views.

Non-numerical data.

- Postdate.

- Last activation date.

Unstructured data

- Headline.

- Post of news or talking.

Preparing Data, The purpose of preparing data is to clean data and transform data to cluster the topic of posts with the LDA model.

### A. Model

Bag of Word The Bag-of-words model is a disordered document representation — only the counts of words matter.

1) *TF-IDF*: NLP (Natural Language Processing) is a sub-field of Artificial Intelligence. The textual representation can not be worked with Machine Learning Algorithm and must be converted into some form of numeric representation. The most common approach to deal with that case is Bag of Words (BOW). But BOW cannot perform so well. So, another approach, TF-IDF is used.

Term Frequency (*TF*) Equation can be described as  $TF(i, j) = \text{number of } i \text{ in the } j / \text{total number of words in } j$  Where,  $i$  = word,  $j$  = document

Inverse Data Frequency (*IDF*)  $IDF(i) = \log(\text{number of } j / \text{number of } j \text{ that contains } i)$  Where,  $i$  = word,  $j$  = document  
The score of TFIDF is by multiplying these two equations.

#### B. Topic analysis

Topic analysis (also called topic detection, topic modeling, or topic extraction) is a machine learning technique that organizes and understands large collections of text data, by assigning “tags” or categories according to each individual text’s topic or theme. machine-learning algorithms that count words and find and group similar word patterns. Topic modeling is an unsupervised machine learning technique. This means it can infer patterns and cluster similar expressions without needing to define topic tags or train data beforehand. This type of algorithm can be applied quickly and easily, but there’s a downside – they are rather inaccurate.

1) *latent Dirichlet allocation*: latent Dirichlet allocation (LDA) is a generative statistical model that allows sets of observations to be explained by unobserved groups that explain why some parts of the data are similar.

### IV. RESULT AND DISCUSSION

#### A. Result

1) *Using LDA for extract topic from I ching news webpage*:  
We used LDA to extract topic from 481 subjects. By dividing it into 4 cluster, the key words are as follows

Toppic	Important words
Toppic 0	china, friend thank, hi, offer, trigram, write
Toppic 1	journal, app, software, course, pdf, window
Toppic 2	amazon, download, html, publish, follow, forum
Toppic 3	order, english, blog, youtube, classic, workshop

Now, we have 4 clusters to define news subjects. Next we will label the topic to all clusters.

Toppic	Label
Toppic 0	Greeting
Toppic 1	Online content (book)
Toppic 2	Order and download book in Amazon
Toppic 3	Online content (video)

The most important cluster is topic 2 and other topic are appear less than 10 percent for each subject.

2) *Using LDA for extract topic from I ching reading borad*:  
We used LDA to extract topic from 15997 subjects in reading borad. By dividing it into 4 cluster, the key words are as follows

Toppic	Important words
Toppic 0	relationship, answer, hexagram, interprete, receive
Toppic 1	hexagram, mean, year, answer ,want
Toppic 2	job, work, hexagram, want, good
Toppic 3	hexagram, edit, last, move, good

Now, we have 4 clusters to define news subjects. Next we will label the topic to all clusters.

Toppic	Label
Toppic 0	Relationship
Toppic 1	Interpret hexagram
Toppic 2	Job
Toppic 3	How to do when get a prediction

Topic 0 appear in 4349 subjects.

Topic 1 appear in 3606 subjects.

Topic 2 appear in 4983 subjects.

Topic 3 appear in 2850 subjects.

#### B. Discussion

## V. CONCLUSION

## ACKNOWLEDGMENT

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